

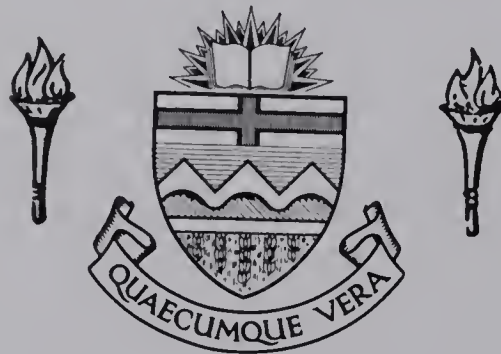
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THE IDENTIFICATION OF FUTURE SCHOOL DROPOUTS BY
THE ANALYSIS OF ELEMENTARY SCHOOL RECORDS

by



WILLIAM JOHN EDE

A THESIS

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The undersigned certify that they have read,
and recommend to the Faculty of Graduate Studies for
acceptance, a thesis entitled "The Identification of
Future School Dropouts by the Analysis of Elementary
School Records" submitted by William John Ede in
partial fulfilment of the requirements for the degree
of Master of Education.

ABSTRACT

The purpose of this study was to investigate the elementary school records in the Lethbridge Public Schools for a group of dropouts and a group of non-dropouts. In terms of the student records, the study was designed to explore the possibility of identifying students in the elementary grades (at the grade five and six levels) who might be future dropouts in the junior high school or in the senior high school.

Eight problem areas were stated as null hypotheses; relevant variables were selected on the basis of the survey of the literature and the limitations of the student recording system used in the school district. Cumulative records, classroom record books, attendance forms, and other school records were used to obtain data.

The study involved four hundred students: a study group of one hundred boys and one hundred girls who dropped out of school, and a control group of one hundred boys and one hundred girls who graduated with a high school diploma or senior matriculation. The Study and Control Groups were matched by sex, ability rating on a five point interval, and by month and year of birth. A reduced sample was selected by matching students in the study and control groups within one point on ability rating. The reduced sample included 272 students composed of 148 boys; 74 boys in each of study and control groups; and 124 girls with 62 in each of study and control groups.

Analysis was carried out by several methods on these samples.

It was concluded that factors could be discovered as early in a student's school career as the grade five level which could be useful in identifying a student who may be an eventual school dropout. The study showed that a number of factors combine at different developmental levels of a particular student to influence the pattern of behavior that leads to that student's leaving school prematurely. Differences were noted between study and control groups on academic achievement, discipline records, teachers' comments, and number of grades repeated. The differences on variables such as occupational class, mobility rate, and area of residence were not as consistent as those for the other variables mentioned above. There was also some indication that certain variables were more useful in identifying potential dropouts for boys than for girls. Attendance did not appear to be a significant variable.

The principal recommendations were that accurate recording of pupil information is necessary in all school systems; that guidance personnel should be available to the elementary school students; that some system needs to be developed which will meet the individual needs of the students in the elementary school; and that adequate testing programs need to be established which will assist the elementary teachers to evaluate and to help their students. Finally, further research is needed in the area of identifying potential dropouts while the students are in the elementary school, since this is the one area in the school system where aid can be given and some preventive steps taken to stop or reduce future dropouts.

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CHAPTER I

STATEMENT OF THE PROBLEM AND DEFINITION OF TERMS

I. INTRODUCTION

The traditional concept of education has placed the emphasis on the academic courses in the school curriculum. This is a natural outcome of the first kind of education developed in Canada, in which schools established their programs on an academic basis. As a result the general public has given a higher prestige to the academic program and to the student who takes the academic program in the schools. At times students are even pressed into this route by parents and educators, with the result that schools may do a disservice to many of the students. Some students leave school because they have neither the desire nor the ability to gain success in this type of education, or because in a more general way, they fail to adjust to the school situation and to meet its demands.

The school dropout is not a new problem; students have left school prematurely and some will probably continue to leave school at a time that is not considered appropriate by some members of society. The Cameron Commission carried on a three year study of the dropout problem in Alberta schools

prior to 1957; the study revealed that out of every one hundred students who wrote the Grade IX final examinations in Alberta schools, fifty did not remain in school to complete their education and to write the Grade XII final examinations. Research carried out in the United States shows that during the decade of 1960 to 1970 the dropout problem will be accentuated by the unprecedented number of young people who will enter schools and hope to complete their education. This large increase in the number of potential students is partly the result of the post World War II higher birth rate and over this decade some twenty-six million young people will be thrust upon the labor market. They will have varying degrees of educational preparation and unless some action is taken approximately seven million will be school dropouts and about two million will have had less than eight years of formal education (11, p. 215).

A similar development is probable in this country. The Canada Year Book reports that the number of persons in Canada under fifteen years of age increased between 1951 and 1961 by two million or about 46 per cent. In Alberta during the same period the under fifteen age group increased by about 64 per cent. Of this age group in Canada there are 3,312,058 students in schools and 780,846 students in the next age group fifteen to nineteen are also still in the schools. In the fifteen to nineteen age group, Alberta had approximately

one hundred thousand students in 1961 (2, p. 305). This age group includes the largest proportion of potential dropouts.

Both as a result of a shift in the age distribution of our population now and of the increasing stress on longer and more diversified formal education, it is increasingly difficult for young people to find employment if they leave school early. It is obvious that in this age of automation these young people will face a changing world in regard to the kinds of jobs and the number of jobs that will be available to them. The present study was concerned with the vital problem of preventing dropouts before they have the opportunity to develop and thus prepare young people to enter the world of employment with a greater probability of success.

II. THE PROBLEM

Statement of the Problem

The purpose of this study was to investigate school dropouts in the Lethbridge Public Schools during a four year period to ascertain what factors were related to school dropouts and to analyze the relationship of these factors to school records at the grade five and six levels. The study attempted to determine if data included in school records at the grades five and six levels might be useful in identifying future or potential dropouts.

Sub-Problems to be Investigated by the Study

The following sub-problems were developed to examine differences between two groups at the grades five and six levels in the schools.

1. Is there a difference in attendance between the students who eventually drop out of school and those who complete their high school education?
2. Is there a difference in academic records between the students who eventually drop out of school and those who complete their high school education?
3. Are there differences in the written comments of teachers regarding their students between the students who eventually drop out of school and those who complete their high school education?
4. Is there a difference in the socio-economic area in which the family resides between the students who eventually drop out of school and those who complete their high school education?
5. Are there differences in the discipline records between the students who eventually drop out of school and those who complete their high school education?
6. Is there a difference in the mobility of the family or in the number of schools attended by students between the students who eventually drop out of school and those who complete their high school education?

7. Is there a difference in the occupational class of the parents between the students who eventually drop out of school and those who complete their high school education?

8. Is there a difference in the number of grades repeated between the students who eventually drop out of school and those who complete their high school education?

III. NEED FOR THE STUDY

The present rate of school dropout in Canada, the United States, and other countries in the world indicates that the dropout problem is a serious social problem in our society. In the Lethbridge Public Schools approximately one pupil out of fourteen at the junior and senior high school levels drops out of school. Although this dropout rate is not as high as the average for Canada, it still constitutes a problem in that any student who leaves school prematurely and who could have been kept in school in an educational program is likely to contribute less to society and may even become a burden. Therefore, it is necessary for the guidance personnel, classroom teachers, and administrators to recognize the measures that can hold potential dropouts in school until they complete an educational program. The schools have a responsibility to students, parents, taxpayers, and to all members of society to educate the youth of today to the fullest extent. Any possible method that can be established to assist with the

identification of eventual dropouts may prevent some students from leaving school in their junior high school or senior high school grades and thus contribute to a better educated citizen.

IV. DEFINITIONS, ASSUMPTIONS, DELIMITATIONS

Definitions of Terms

Dropout, in this study, refers to any student who left school when he or she attained the full age of fifteen years, but had not received a high school diploma or senior matriculation. A second group included in this study, are older students enrolled in a school program who leave school before they complete that program; this includes any student who leaves school voluntarily or is required to leave school due to suspension or expulsion.

Elementary Records. The elementary schools in the Lethbridge Public Schools keep a record book called a "Classroom Record Book" which contains a separate information sheet for each student. This sheet provided much of the necessary data (see Appendix). The cumulative record cards provided additional information that was used in this study.

Socio-economic Area. This refers to the general level of income and standard of living or way of life within a specific geographic area. For purposes of this study the

city of Lethbridge was divided into nine zones based on average assessment of property, the business and industrial configuration, the date of construction of the homes, the amount of local improvements in the area, and advice from city officials and planners.

Discipline Records. In this study discipline records refers to information on general conduct and on behavioral problems that was obtained from the cumulative record cards, the classroom record book, attendance officer reports, and records kept by the various school principals in the Lethbridge Public Schools. Guidance Clinic reports were also used as sources of data.

Degree of Mobility. This refers to the number of schools that a student attended while in the elementary grades. School records were the source of information for the number of schools attended by each of the students involved in the study.

Occupational Class refers to the classification of occupation on such characteristics as schooling and income. Information regarding the occupation of the father and/or mother was obtained from the cumulative records and was placed in an occupational class by means of a scale developed by Blishen. There are seven classes in the Blishen Scale but in this study they were combined to yield five main occupational class groups. If the father is deceased the occupation of

the mother was used in this study to determine occupational class, otherwise the father's occupation was the basis for determining occupational class of the family (1, pp. 477-485).

Academic Records. In this study academic records refers to the average mark for the grade five year and the average mark for the grade six year. These average marks for the year were obtained from the Classroom Record Book for each student in the study. If a student repeated one or more of these particular grades the first mark obtained by that student in the repeated grade was used in the analysis.

Ability Rating. Ability is defined in terms of the intelligence test score obtained by the student in the grade five school year on the Otis Intermediate Examination Form A, which is given to the grade five pupils each year prior to November fifteenth. The test is also administered to any grade six student who has not had the test previously.

Study Group refers to the group of students who dropped out of school and were classed as dropouts by the criteria used in this study; this group includes one hundred boys and one hundred girls. The potential Study Group included five hundred and seventy-three dropouts in the period from 1961 to 1965; this was reduced to two hundred through matching on ability rating, sex, and month and year of birth with the students in the Control Group.

Control Group refers to the group of students who completed an educational program in the Lethbridge Public Schools

for which they received a high school diploma or senior matriculation. Students who received enough credits for a high school diploma in commercial, business, technical, or a combination of patterns were included as members of this group. The Control Group includes one hundred boys and one hundred girls matched in ability rating, sex, and month and year of birth with those in the Study Group.

Assumptions

1. The main assumption was that students who experienced difficulty in one or more of the problem areas used in the study, were the ones who dropped out in the junior high school or the senior high school. The study was designed to test this assumption.

2. It was also assumed that the elementary records used as sources of data for the study were reasonably reliable and therefore were a valid source of information on each student.

3. It was assumed, for purposes of statistical analysis, that the scales established to code the data for the variables used in the study were adequate for the statistical treatment applied.

Delimitations

1. The sample for this study was drawn from the elementary, junior high, and senior high schools in the

Lethbridge Public School system of Lethbridge Public School District No. 51.

2. Dropouts and non-dropouts used in the study were selected from the students' records for the years of 1961-1962, 1962-1963, 1963-1964, and 1964-1965.

3. Students who were forced to leave school for medical reasons were not included in this study.

Limitations of the Study

1. The conclusions reached are limited by the extent to which the elementary records are an accurate and reliable source of student information.

2. The use of the Blishen Scale in arriving at the occupational class of the parents whose children are involved in the study should be reasonably valid. Nevertheless, unknown factors involved in the Lethbridge community may make this index less reliable.

3. The procedures used to designate socio-economic area may be a limitation in that the application of the selected criteria did not establish distinctly different areas.

4. In some of the variables considered such as the teachers' comments and discipline records a precise interpretation of the data was not possible. Scales were set up to code these responses and the comments made by different

teachers and administrators were accepted as equivalent.

5. The matching procedure followed may be a limitation since it was not possible to match the Study Groups and the Control Groups by exact intelligence quotients or by exact day and year of birth. Therefore, a sufficient high degree of matching may not have been achieved and the design used may not be the most appropriate to the investigation of the problem.

V. ORGANIZATION OF THE THESIS

The next chapter presents a summary of the literature related to this study, with emphasis upon the variables considered in the sub-problems. Since there is a vast amount of literature dealing with dropouts, the summary will of necessity deal with the particular studies that consider the identification and prediction of dropouts at an earlier date in the school career of the students. Chapter III deals with the collection, organization, and treatment of the data collected in the Lethbridge Public Schools over the four year period specified in Chapter I. In Chapter IV the data are analyzed and tables presented showing the results of the descriptive analysis. This is followed in Chapter V by the results of statistical analysis and hypothesis testing. The final chapter contains a summary of the study, the general conclusions reached, and a statement of recommendations for further study and research.

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CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of this chapter is to present a survey of some of the current literature which is relevant to the problems considered in this particular study. The literature on the topic of school dropouts is extensive and a complete survey is impossible, but pertinent information is nevertheless required to give the background obtained from the literature that gave impetus to the present study. Literature was surveyed for each of the sub-problems and has been organized under four main topics for presentation in this chapter.

I. INTELLIGENCE AND THE DROPOUT

Intelligence is probably one of the most misunderstood concepts in education, and yet is one that has probably been studied and analyzed more than any other concept. Tyler states that differences in intelligence and in the narrower processes of which it seems to be composed--memory, judgment, problem-solving, and the like--have been demonstrated in hundreds of studies at all age levels (29, p. 18). Many studies have shown that the level of intelligence does not remain constant but changes during the school years increasing or decreasing

as much as fifty IQ points. The latter has been shown in studies carried on at the University of California (29, pp. 81-83).

It is often assumed that the school dropout leaves school because of low intelligence; however, the results of many studies make it clear that there is much overlap in the intellectual capacities between the dropouts and the non-dropouts. Hohol reports that the intelligence of the dropout is higher than most school administrators suspect, and that the average dropout has the mental capacity to do the work required of the average high school student (16, p. 9). In a study involving grade ten classes in five centralized high schools in Alberta, Larson found that of students with an intelligence quotient of 115 or better, 62 per cent completed high school and gained a high school diploma or matriculation, while of students with an intelligence quotient of 115 or lower, only 19 per cent were successful in completing high school (21, p. 213). The United States Department of Labor in a recent study of twenty-two thousand school-leavers, found that the majority (54 per cent) of dropouts had average intelligence (90-110 IQ) or better. Youth who had an intelligence quotient below this level were twice as prone to drop out of school as students with higher intelligence quotient levels but at every level there was overlapping (15, p. 101). Attempting to predict

how far in the grade structure a student in grades five or six will be able to progress presents a complex problem. It appears from many studies that knowledge of intelligence alone will not enable prediction of school progress. Havighurst presents data on the relation of intelligence and social status to progress through school and shows that these two factors are strongly predictive of school success. Havighurst states:

There is a close connection between intellectual ability and school progress. In the highest quartile, half of the girls and over half of the boys went to college; less than a tenth dropped out of school before high-school graduation. By contrast, in the lowest quartile less than one-tenth continued their education beyond high school, and three-fourths of the boys and over half of the girls dropped out before high-school graduation. (15, p. 52)

A number of studies have shown that it is not inadequate mental ability alone that causes students to drop out of school, therefore, this particular study considered other factors that might influence a student to be a potential dropout. A concluding statement worthy of repetition has been given by Ziel, who states:

. . . our society cannot assume that youngsters who will not become university students are incapable of rigorous attention to some sort of standards. One of the most appalling and unhappy errors that our society made in the past was to assume that youngsters incapable of the highest standards of intellectual performance were incapable of any standard whatsoever and could be properly subjected to shoddy, slovenly, and trashy educational fare. The society which scorns excellence in plumbing because plumbing is a humble

activity, which tolerates shoddiness in philosophy because it is an exalted activity will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water. (35, p. 48)

In view of the possible relationship between ability and school dropout, intelligence was used as a matching or control variable in this study.

II. ACADEMIC AND ATTENDANCE FACTORS

Academic Records

The evaluation of the range of outcomes in which a modern school is interested involves understanding as well as knowledge, ability to apply as well as to reproduce, appreciation as well as skill, and attitudes and interests as well as achievements. It is essential for teachers to use a variety of methods of appraisal in their testing and evaluation procedures such as observation of classroom performance, participation in discussions, contribution to group efforts, grading of written assignments, and various types of pencil-and-paper tests.

Paton states that there can hardly be much doubt that the single most important task of the school of the future will be an effort to develop in every student, to the limit of his capacity, the power of independent thought. Further, that most school subjects have a body of information and of facts which teachers since the beginnings of recorded history

have felt must be assimilated, sometimes painfully, before the student can be certified as "knowing" or passing in, the subject (24, p. 19).

When relating academic records to the problem of the school dropout, Horowitz found that poor reading ability, subject failures, and lack of interest in or dislike of a certain subject identified the potential dropout (19, p. 375). Cervantes listed the following characteristics as important in identifying the potential dropout:

Two years behind in reading or arithmetic at the seventh grade level. Majority of grades are below average. Failure in one or more school years; (1st, 2nd, 8th, 9th grades) most commonly fail; 85 per cent of dropouts behind one grade; 53 per cent two or more years behind their age group. Performance consistently below potential (24, p. 198).

Low achievement in reading as measured by a standardized reading test was a factor that Zeran found to be associated with dropping out of school (34, p. 2). The Nova Scotia Guidance Letter reported that a consistently low record of achievement and significant retardation in the basic courses in the curriculum were symptoms of early school-leaving students (23, p. 7). Similarly, Stock found that retardation and persistent low marks in academic subjects such as English, social studies, and mathematics appeared to be the most prominent causes of dropping out. He outlines a method of setting up an age-grade placement and a ranking of average

marks that assist in locating potential dropouts (28, p. 63).

In conclusion, the study conducted by Havighurst showed that the boys and girls who achieve well in school generally are those who have the advantage of families that help them and stimulate them to do good school work, in addition to their average or superior mental ability. Further, that motivation for school achievement is necessary, and this comes about through the experience of a child with his family, his friends, and neighbors, his teachers, and the world as he senses it directly and through books and pictures. It appears that the school may be especially helpful to the minority, who have the kind of experience that leads to good school achievement despite poverty in the home, or average intelligence, or poor social adjustment by supplying some of the motivating experience that they do not get at home (15, p. 46).

School Attendance

Compulsory attendance regulations have the effect of delaying, if not reducing, dropouts. Thus, the nature of the regulations will influence the time of dropout as well as day-to-day attendance. School attendance regulations as reported in the CEA Information Service Bulletin show that there have only been a few minor changes in the regulations for the provinces in Canada. In most of the provinces school attendance is compulsory until the fifteenth birthday, but in

Alberta, Ontario, and Nova Scotia attendance is compulsory until age sixteen. The lowest grade or level completed before a child can leave school is legislated in New Brunswick, Ontario, Alberta, and Saskatchewan. The lowest age possible for a child to attend school is set in all provinces except Newfoundland (3, p. 1). These conditions may have a bearing on the attendance of pupils who have not adjusted well to the school, but who have not reached the age of school leaving.

In this regard, Havighurst reports that attendance at school is an indicator of general adjustment to school. From kindergarten through the seventh grade the dropouts in his study were absent about 20 per cent more than their controls. Then in the eighth and ninth grades the absences of the controls decreased sharply. It seems clear that the future dropouts were already dropping out of school in their own minds, a few years before they dropped out physically (15, pp. 61-62).

A major study by Cervantes lists irregular attendance and frequent tardiness as one of the characteristics commonly found among potential or actual dropouts. Further, when the friends of a potential dropout are not school oriented, are not approved by parents, and are much older or younger there is more chance of the student actually dropping out of school (4, pp. 198-199). Dillon found a marked regression in

attendance from elementary to junior high school and to senior high school for students who dropped out of school (8, p. 94). This finding was supported by Horowitz who found that poor attendance was a very important characteristic of early school leavers (19, p. 382). Frequent absenteeism was also found as a symptom of potential dropouts in the Nova Scotia study (23, p. 7). However, Gragg found that school attendance was a non-significant factor in his analysis of dropouts and high school graduates (12, p. 58).

Repeating Grades

One of the characteristics of the education system which may contribute to the dropout problem is that it appears to be geared to the average, or better than average child; the school system frequently seems to lack provision for slow learners, on one hand, or the gifted children on the other. The effect on the gifted student is more difficult to estimate but its effect on the slow learner may be revealed in the number of children who are repeating grades. The causes of grade retardation may include lack of ability, physical defects, lack of interest in school work, maladjustment to school life, poor study habits, poor attendance, poor teaching, unfavorable home influence, over-crowding in the classrooms, attitude of the parents to education, and a failure on the part of the school to recognize individual differences.

In discussing the graded school and its relation to school dropouts, Dispasquale states:

Grade failure was conceived originally to give the child a second year to learn the essentials prerequisite to the next grade. However, it does not always work. Often the repeater does no better the second year than he did the year before. Research indicates that he might have done as well, if not better, had he been permitted to go into the next grade.

When a child repeats a grade, he begins to dislike school, if he does not already dislike it. When he fails twice, he does not want to go to school. When he fails three times, he is almost certain to be a dropout (9, pp. 129-130).

Havighurst concluded that personal and social adjustment takes its place beside socio-economic status and intellectual ability as factors that are probably the best predictors of success or failure in school and in the tasks of growing up in River City. Further, it is not clear which elements are more deeply causal, but it seems clear that the foregoing three factors interact to make for success or failure. It appears that the best equipment for satisfactory growth is a keen mind, the ability to accept oneself and be well accepted by others, and to come from a middle-class family. Havighurst also states that about 20 per cent of school children fail one or more grades by the time they reach high school (15, pp. 35-36).

In regard to retardation or becoming over-age, Hohol found that when the standards and policies of the school system cause pupils to repeat grades and do the work which

they are hopelessly incapable of doing, the school system produces extensive retardation which complicates the teaching situation. The elementary school may be contributing to a considerable extent to the retardation which results in eventual withdrawal from school. As absence from school, frequent transfers, and health are related in a general way to this problem, an increasing sensitivity to these factors on the part of the elementary school is definitely required (16, p. 9). In the studies conducted by Dillon, Gragg, and Horowitz, retardation was found as one of the most significant factors in predicting dropouts in high school (16, p. 8). Cervantes also stressed the fact that failure in one or more school years, usually in the first, second, eighth, or ninth grade in school, was commonly found in studying youth who are potential or actual dropouts (4, p. 198). A similar situation was found by Zeran who states that retardation in school, and lack of a sense of belonging in school are important factors that are associated with the dropout students (34, p. 2). Hollingshead in discussing over-ageness, states:

Some Class V youngsters from very low-ranking families start dropping out of school when they are 12 years of age; and once the process has begun, it accelerates gradually during the fourteenth and fifteenth years, until it reaches a peak in the sixteenth year. By the end of the fourteenth year, approximately one-third of the youngsters in both Classes IV and V have quit school. Before the sixteenth birthday is reached, 64 per cent of Class IV's and 75 per cent of Class V's have left school. The dropout pattern

is definitely different in Class III (11 of the 12 withdrawals took place after the sixteenth birthday). (18, p. 331)

There seems to be general agreement in the studies discussed in this chapter and other studies reviewed, that failure and becoming over-age are important factors in predicting eventual dropout. The fact that non-promotion does not solve the problems for the under-achiever is aptly illustrated in the summary of research on promotions by Worth (33, p. 61). Worth continues by giving the following picture of the typical non-promoted pupil:

He is likely to be a boy, of somewhat less than average ability, with apparently little interest in school work, whose level of performance in various aspects of the school's program is consistently below that which is normally expected of children of his grade. He probably comes from a relatively low socio-economic group, is absent from school a great deal, and has experienced non-promotion before. His social-personal development is apt to be viewed with some concern by his teachers. Moreover, he may simply have been "unlucky" in his choice of school and teacher. (33, p. 63)

Much literature is available on the various methods of meeting the individual differences of pupils and many school systems have adopted continuous progress, non-graded, unit study plans, and enrichment programs of various types to meet the challenge of providing for these individual needs. This particular study will not attempt to review this literature, but its importance in any consideration of promotion versus

non-promotion problems in schools is not in any way minimized by this treatment.

In summary, the studies reported in this section showed that subject failures, lack of interest in, or a dislike of a certain subject, low achievement in reading on standardized reading tests, and lack of motivation were significant factors for use in identifying potential or actual dropouts. School attendance of a student does indicate the general adjustment to school and irregular attendance and frequent tardiness are characteristics commonly found among actual or potential dropouts. Non-promotion was one of the most significant factors in predicting or identifying dropouts in the studies reviewed.

III. BEHAVIOR FACTORS AND THE DROPOUT

Discipline Records

The function of providing a situation in which learning can effectively take place is frequently referred to as discipline. Atkinson points out that the concept of discipline has changed considerably over the years and teaching children to control their conduct in terms of intelligent choices and the welfare of the group is not an easy task. Furthermore, that great importance is attached to the problem of classroom discipline by laymen as well as by educators because control, in terms of the common good, is absolutely essential in all situations in which humans live or work together in groups.

Therefore, it seems obvious that teachers must strive to establish the proper climate for good discipline (2, p. 4). This is explained by Satlow who states that good discipline develops through positive steps and further that . . . :

Preventive discipline promotes effective teaching. Good class discipline is a prerequisite to effective teaching. The tension of teaching is increased when disciplinary problems occur. Moreover, learning is impaired when the proper class atmosphere is lacking. For this reason the teacher must give his fullest attention to the question of proper class behavior. (26, p. 1)

Zeran listed the following factors that can be associated with discipline and the dropout:

A negative attitude or lack of any attitude on the part of the parents toward education and the teachers.

Discipline cases in school, a lack of a sense of belonging, poor or low citizenship rating, and having a juvenile court record. (34, p. 2).

A lack of interest that a student exhibits toward school work and the lack of participation in extra-curricular activities definitely are factors that are related to the eventual dropping out of students from the schools. This is illustrated by Hohol who found that a substantial reason for students leaving school was the fact that the student becomes disinterested in, or discouraged about his or her school program. If students believe that the school program has little practical value for them, they will not remain in school; young people must be convinced of the worth of the school program if they

are to remain voluntarily to complete it (16, p. 8). Among Gragg's findings one of the most significant was that the amount of participation the student exercised in extra-curricular activities tended to indicate the interest in school (12, p. 59). In regard to predictive factors of dropouts, Dillon found that evidence of a feeling of insecurity, or a lack of belonging in school and a marked lack of interest in school were important factors (8, p. 94). Gushaty found in his study of the causes of dropouts in the high schools of southern Alberta that 22 per cent of the students who completed the questionnaire stated that lack of interest in school was one cause of the dropout (13, p. 36).

A major study by Hollingshead of out-of-school adolescents concluded:

The out-of-school adolescents are products, in large measure, of the impact of the Elmtown social system on them as constituent members of this system. Cleavages, frictions, and clashes between classes, institutions, families, and individuals are intertwined in devious ways which reach into many phases of community life. The policies of the Board of Education are conditioned in a number of ways by class interests, particularly with respect to their ties with property ownership and taxation. The effects of Board policy are reflected in (1) the administration of the schools, specifically with the way the compulsory attendance law is administered; in (2) the sensitivity of the school officials to the wishes of the upper classes; and in (3) the invidious way discipline is carried out in the case of children from very low-ranking families, such as the Flahertys. These things are reflected further in the large number of withdrawals in the two lower classes. (18, p. 357)

The studies considered showed that the attitude of the parents toward school are reflected in a student's behavior. Among other things, a lack of interest in school work; a lack of a feeling of belonging, aggressive behavior patterns, passive behavior patterns, and social and personal maladjustment are factors that contribute to the eventual dropout of a student from the schools.

Teachers' Comments

This is an area in the research on dropouts that, to say the least, is very inadequate. When a teacher's comments are used as a basis for predicting or identifying potential dropouts, we must immediately consider the subjective nature of the information.

Hohol points out the findings of his studies on this factor in the following:

Personal qualities such as co-operative attitude, courtesy, dependability, ambition, self-confidence, initiative, leadership, and resourcefulness are possessed by all pupils to some degree. In the few studies which attempted to discover whether these were related to the dropout problem, the ratings were of necessity subjective. The evidence, therefore, appears to be conflicting. (17, p. 255)

Zeran lists some points that give teachers some direction in this analysis of a pupil's personal attitude and behavior in school. They are:

Carry on parent-teacher conferences and make home calls on those who do not come to school.

Parent-study groups could be promoted.

Parent-teacher-pupil conferences are also useful.

Utilize the results of sociometric studies, use peer groups in aiding individuals.

Assist each pupil to feel he belongs, is wanted, is needed and has something to offer.

Aid each pupil to realize that he has responsibilities as well as rights.

Utilize group procedures especially in the area of personal-social relations.

Help each pupil build an image of himself which will utilize his potentials and lead him to become what he is potentially capable of becoming.

Take graduate courses in Principles and Practices of guidance; Informational Services--Occupational, Educational, Personal-Social; Counselling Techniques; Psychological Tests and Testing. (34, p. 4)

In regard to habits, values, and attitudes exhibited by pupils, Davis and Havighurst state that children identify themselves with one or both parents, and take their values, their concepts of right and wrong, into themselves as their own. Children tend to imitate their parents and thus their personality is strongly influenced by their environment (5, pp. 29-66). According to Cervantes, one of the reasons for the appalling lack of influence of the teachers on the personal behavior of students is that mass education has minimized personal relationships. A teacher who contacts three hundred students per day may find it difficult to be interested in the individual. Thus there is not likely to be an early recognition of the danger signals of the

potential dropout and a referral to the counselling program which would be a great help toward correcting the situation (4, p. 214).

In summary of the studies reviewed, it appears that the variable of teachers' comments is a problem area which has not been considered in any depth since the comments are necessarily subjective and any evidence is inconclusive.

IV. SOCIAL AND ECONOMIC FACTORS

Socio-Economic Area

The community is a significant factor in the transmission of culture to the individual. It is generally regarded that education is the responsibility of the community as a whole and many associations, activities, and experiences are provided by community life (27, pp. 55-57). Hart lists many types of community experiences which educate children, and he points out that the schools play some part in all these matters, but not as much as school men would like to believe (14, pp. 59-60).

People who live in different ways will react to situations in different ways and will think in different ways. It was on this basis that the variable of socio-economic area was included in this particular study. Havighurst found that there is a tendency for dropouts to live in the

lower social class areas, whereas their socio-economic controls live in areas with more middle-class neighbors (15, pp. 63-64). Similarly, Zeran listed living in a home of low rental value and living in a community or neighborhood area having a preponderance of low rental units, especially houses made over into apartments, as a common characteristic of drop-out students. The occupational level of the father, whether skilled, semi-skilled, or unskilled, the factor of broken homes, and the low educational record of the parents were also factors identifying potential or actual dropouts. Further, if a student lives in a community or neighborhood area having a consistently high record of dropouts he is more likely to drop out of school (34, p. 2).

Hollingshead concludes that the out-of-school adolescents are products, in large measure, of the impact of the Elmtown social system on them as constituent members of this system. Further, that cleavages, frictions, and clashes between classes, institutions, families, and individuals are intertwined in various ways which reach into many phases of community life (18, p. 357).

In Deverell's study the principal cause of dropout was the economic factor which made it difficult for parents to send their children away to school. The lack of high school facilities near the rural farms was a factor and in addition,

the population, which was relatively homogeneous in socio-economic characteristics, did not value education as highly as did those parents in the professional, managerial, and clerical groups (7, p. 2). The tenure of residence was not a significant factor in Gragg's study of dropouts (12, p. 58).

The studies cited above showed that communities that have a high dropout rate will have an influence on the in-school-students and may lead to some of them eventually dropping out of school. Also parents' lineage, wealth, morals, manners, and their class mobility did influence the students who did drop out and those who might eventually drop out. The students living in a home of low rental value or in an area with many low rental units and students who came from broken homes were more likely to be potential dropouts.

Parents' Occupational Class

Occupation is very important in shaping the life of the worker and his family. It is common practice to identify a man by name, address, and occupation; since the latter is related to income it is also very influential in determining social prestige. The occupation of an individual is related to the habits, attitudes, interests, beliefs, and values that are held by that person. When a student in school is considering his future career he tends to look at the economic factors involved and then selects his life's work using this

item as one criterion. Occupation has much to do with determining the location and kind of residence of the family, and thereby the schooling, playmates, social contacts, and leisure-time activities of the family members.

Hohol stated that the evidence strongly indicates a relationship between economic status and dropping out of school, but a fatalistic view is not justified. Many children, despite economic handicaps, under effective guidance remain in school to improve their talents and win for themselves a good start in life (17, p. 253). According to Dillon, schools need to demonstrate the relationship between education and life and provide counselling early in occupational choices for the students in secondary schools (8, p. 94). Horowitz suggests that the low financial status of the family is often characteristic of the dropout student (19, p. 383). Similarly, the Nova Scotia study lists indications of poor economic conditions at home as a characteristic of early school leaving students (23, p. 7). In discussing occupational choices for students in the schools, Zeran suggests that from the earliest grades educators need to work with the pupils to develop wholesome attitudes toward all fields of work, and to acquaint the pupils with some of the abilities as well as the personal qualities needed in occupations (34, p. 3).

The data gathered in connection with Dresher's study indicate that the occupation of the parent is one of the most

significant factors that lead to voluntary dropouts. He adds that the managerial, clerical, professional, and non-professional parents are the ones whose children are most likely to graduate from high school (6, p. 63).

Hollingshead points out that literally thousands of different values were shared and used by Elmtowners to assign one another positions in the prestige structure. The important values are associated with (1) the economic activities through which the family derives its livelihood, and (2) with its connections in the familial, property, ethnic, religious, political, educational, recreational, and welfare systems (18, p. 79).

Weiss and Riesman state that the point at which a boy leaves the educational escalator is crucial in determining his future occupational opportunities. The lower-class youth is less likely than the middle-class youth to see the relevance of education for his later occupational activity. It still remains true that where people end up in the occupational world, turns out to depend, in large part, on where they begin (32, p. 478).

In connection with predicting the work adjustment of students, the findings of Havighurst are appropriate in that he feels that a substantial statistical reliability is obtained in predicting this work adjustment from intelligence quotient at the sixth grade and from the socio-economic status

of the family. A poor school record tends strongly to guarantee a poor work record (15, pp. 137-142).

The above studies showed that a strong relationship existed between economic status and dropping out of school. Therefore, parental financial status and the occupational level of the parent may be useful factors in identifying potential dropouts.

Student Mobility and Dropouts

The mobility of the family unit has been more widespread in the past twenty years, and as a result we are beginning to speculate that student mobility may have an effect on the attitude, adjustment, achievement, and progress of these individual students. The average family moved once in seven years about twenty-five years ago, whereas the average family moves once in three years now. It is estimated that within the next year, 26 per cent of all Canadian families with children in school will change their address (31, p. 14). These moves may be from one house to another in the same location, to another location in the same province, to one of the other Canadian provinces, or to some other country. Probably the only ones who suffer severely at moving time are those children who already have serious emotional or family problems, but for most children moving is at least a temporary ordeal.

Hohol, quoting from various studies, pointed out that frequent transfers from school to school was one of the factors that contributed to the identification of probable dropouts from the schools (17, pp. 256-258). According to Zeran the frequent changing of schools, even within the same community, is a factor associated with the school dropout (34, p. 2). Similarly, Cervantes found that this mobility of students was commonly found among youth who are potential or actual dropouts (4, p. 198).

A limited number of studies have shown that student mobility is definitely increasing and therefore, differences in the progress of students who are moving from school to school might be a contributing factor to the potential or actual dropout rate in the schools.

V. SUMMARY OF CHAPTER II

This chapter has considered the literature on the dropout problem in an attempt to obtain evidence from the literature that would aid in identifying a student in the elementary school who might be a dropout in the junior high or senior high school grades.

In general, the studies have shown that the level of intelligence does not remain constant, that dropouts occur at all intelligence levels, that school progress and intellectual ability are related, that intelligence and social

status are predictive of school progress, and that inadequate mental ability alone does not force pupils to leave school. Therefore, in view of the possible relationship between ability and dropout the groups in this study were matched on intelligence scores.

It is apparent from the studies surveyed that discipline problems, teachers' comments, grades repeated, school attendance, socio-economic area, parents' occupational class, student mobility, and academic achievement were all factors that might be useful in the identification of actual or potential dropouts.

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CHAPTER III

COLLECTION, ORGANIZATION, AND TREATMENT OF DATA

This chapter describes the methods used in the collection of data, the organization of these data, the statistical treatment employed in the analysis of data, a description of the samples involved in the study, and the restatement of the problem and the sub-problems from Chapter I as null hypotheses.

I. COLLECTION OF DATA

Permission was obtained from the superintendent of the Lethbridge Public School system to conduct the study and approval was received to use the cumulative record cards necessary for data collection. A survey of the school dropouts for the years of 1961-1962, 1962-1963, 1963-1964, and 1964-1965 was made using the records of the Attendance Officer. A list of these dropouts was constructed and the cumulative records for these students were requested from the senior high school principals and the junior high school principals. A data collection sheet was set up to tabulate the information required for these students. All of the dropouts were listed on these forms if they fulfilled the definition of a dropout as stated in this study.

The next step in the collection of data was the construction of a matching form which listed birthdates, intelligence scores, and sex. Registers were obtained from the junior high schools and senior high schools and all the cumulative records for students who graduated from high school during the four years involved in the study. The students who had completed a high school program obtaining a high school diploma or a senior matriculation were listed on the matching forms and matched with a dropout student by sex, month and year of birth, and on the intelligence quotient score received on the Otis Intermediate Examination Form A, using a five-point interval. The students who were selected by this matching procedure for the control groups were listed on the data information sheets, and the cumulative records and other school records were used to compile the information required for the study. When all of the information for the control and study groups was compiled, the samples were selected for the study.

Selection of Sample

The study involved four hundred students in the Lethbridge Public School system; one hundred boys who dropped out of school in the four years included in the study, one hundred boys who graduated from high school with a high school diploma or senior matriculation during the same four

years, one hundred girls who dropped out of school, and one hundred girls who graduated from high school in the period from 1961 to 1965.

The Study Group was composed of one hundred girls who have dropped out of school during the four years 1961 to 1965; and one hundred boys who dropped out of school during these years. These two groups in the total sample were matched by ability within five points, by sex, and by month and year of birth with the corresponding sub-group in the Control Group.

The Control Group consisted of one hundred girls who graduated from high school with a high school diploma or senior matriculation during the years used in the study; and one hundred boys who graduated from high school in these years. These students were matched with a corresponding student in the Study Group on the basis of sex, ability rating within five intelligence quotient points, and by month and year of birth.

A second sample was selected to match students more closely on intelligence quotient score. In this reduced sample students in the study and control groups were matched within one point on intelligence quotient score, by sex, and by month and year of birth.

The Study Group in the reduced sample included sixty-two girls who dropped out of school during the four years 1961 to 1965; and seventy-four boys who dropped out of school

during these years.

The Control Group in the reduced sample was composed of sixty-two girls who graduated from high school with a high school diploma or senior matriculation; and seventy-four boys who graduated from high school in the period from 1961 to 1965.

II. ORGANIZATION OF DATA

The data collected for the Boys' Study Group, the Boys' Control Group, the Girls' Study Group, and the Girls' Control Group for both the total and reduced samples were coded using the grading keys as listed in Appendix. This coded information was transferred to the data sheet for key punching and the punch cards completed for the sample groups.

III. TREATMENT OF DATA

Tables were constructed for the analysis of data and several approaches to preliminary analysis were employed; these included a comparison of sexes without regard to the group to which they belonged, a comparison of Study and Control groups controlling for intelligence quotient, a comparison of Study and Control groups using the reduced sample which included 272 students, and a comparison of the Study

and Control groups using the four hundred students in the total sample.

The F ratio obtained from data was used to compute the t ratio since the value of t equals the square root of the F ratio. The t tests were used to compare groups on the following variables: discipline records, socio-economic area, student mobility, teachers' comments, parents' occupational class, attendance, and average marks. The phi coefficient, or fourfold point correlation was found for the 2 x 2 tables for the variable of number of grades repeated.

Chi square was used as the statistical procedure to test the significance of differences in distributions on each of the variables of discipline, mobility, teachers' comments, socio-economic area, parents' occupational class, and grades repeated between the study groups and the control groups. This statistical method was selected since it enables mathematical procedures to be applied to categories that are not strictly quantitative, and it allows the assignment of weights to every case in the sample in proportion to every other case. In this study using the chi square procedure the 5 per cent level was accepted as the criterion of significance. The degree of relationship between the groups in the study on the variables where chi square was calculated was measured by using the coefficient of contingency.

Frequency tables as presented were based on the collapsed cell information for the variables of discipline, socio-economic area, teachers' comments, and occupational class of the students' parents. This was necessary to increase the cell frequency for the computation of chi square.

IV. HYPOTHESES

The main hypothesis derived from previous research was that there would be significant differences between the students who drop out of school, and those who graduate from high school when the elementary records of these individuals are examined at the grade five and grade six levels.

The eight sub-problems in this study were formulated from the survey of literature on the dropout problem and the information available in the elementary records used in the Lethbridge Public Schools. These sub-problems are restated below as null hypotheses; these hypotheses were tested for both boys' and girls' groups individually and also for the combined study and control groups for both the total and reduced samples.

1. There is no significant difference in attendance between the students who eventually drop out of school, and those who complete their high school education.

2. There is no significant differences in the academic records between the students who eventually drop out of school and those who complete their high school education.

3. There is no significant differences in the written comments of teachers regarding their students, between the students who eventually drop out of school and those who complete their high school education.

4. There is no significant differences in the socio-economic area in which the family resides, between the students who eventually drop out of school and those who complete their high school education.

5. There is no significant differences in the discipline records between the students who eventually drop out of school and those who complete their high school education.

6. There is no significant difference in the mobility of the family or in the number of schools attended by students, between the students who eventually drop out of school and those who complete their high school education.

7. There is no significant difference in the occupational class of the parents, between the students who eventually drop out of school and those who complete their high school education.

8. There is no significant difference in the number of grades repeated between the students who eventually drop out of school and those who complete their high school education.

V. SUMMARY OF CHAPTER III

This chapter outlines procedures used in selection of the samples, the methods used in the collection of the data, the statistical methods employed in the analysis of these data, and the organization of results in the preparation of the thesis. The chapter also contained a restatement of the main problem of the study as a hypothesis and a restatement of the eight sub-problems as null hypotheses. In the next chapter some descriptive statistics on these data will be presented.

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CHAPTER IV

DESCRIPTIVE STATISTICS

The purpose of this chapter is to present a description of relevant variables obtained from the cumulative record cards and other sources for both the study and control groups. Comparisons are made in this chapter between boys and girls, as well as between the total sample and the reduced sample; information is also provided on the interrelationships among the variables.

I. DESCRIPTION OF THE SAMPLES

The total sample included four hundred students composed of two hundred boys and two hundred girls; the boys' study group included one hundred boys who dropped out of school, while the control group included one hundred boys who graduated from high school with a high school diploma or senior matriculation. The girls' study group also included one hundred girls who dropped out of school; and the control group included one hundred girls who completed high school with a high school diploma or a senior matriculation. Study and control groups were matched on five point intervals on intelligence quotient scores as well as

age. A reduced sample was selected by matching students in the study and control groups within one point on intelligence quotient score. The reduced sample included 272 students composed of 148 boys; seventy-four boys in each of study and control groups; and 124 girls with sixty-two in each of study and control groups.

Ability, Attendance, and Academic Records

Table I shows the mean scores for the boys and girls and the combined study groups for the total sample on ability rating, attendance, and average marks. The combined study groups mean I.Q. of 110.03 is slightly below the median I.Q. score of 112 obtained in the Lethbridge Public Schools on the Otis Intermediate Examination which is given at the grade five level each fall. Boys in the Study Group had a slightly higher attendance at both the grade five and grade six levels than did the girls, but the average marks for grades five and six were lower for the boys than for the girls. The differences between boys and girls proved to be statistically significant for only grade six attendance and grade six average marks.

The mean scores for the boys and girls in the Control Groups and for the combined control groups for the total sample on ability rating, attendance, and average marks are presented in Table II. The girls' mean intelligence quotient score is more than two points higher than the mean intelligence

TABLE I
 MEAN ABILITY SCORE, ATTENDANCE, AND AVERAGE MARKS
 FOR BOYS', GIRLS', AND COMBINED STUDY
 GROUPS IN THE TOTAL SAMPLE

| | Combined Study Groups N = 200 | | Boys N = 100 | Girls N = 100 | Level of Signif. |
|----------------------------|----------------------------------|------|-----------------|------------------|------------------------|
| | MEANS | S.D. | MEANS | | |
| I.Q. | 110.03 | 9.06 | 109.54 | 110.53 | NS |
| Attendance Grade 5 | 186.24 | 7.60 | 186.63 | 185.86 | NS |
| Attendance Grade 6 | 186.42 | 7.55 | 187.40 | 185.44 | .05 |
| Average Mark Grade 5 | 74.16 | 6.83 | 73.53 | 74.80 | NS |
| Average Mark Grade 6 | 73.47 | 6.16 | 72.56 | 74.39 | .05 |

TABLE II

MEAN ABILITY SCORE, ATTENDANCE, AND AVERAGE MARKS
FOR BOYS', GIRLS', AND COMBINED CONTROL
GROUPS IN THE TOTAL SAMPLE

| | Combined Control Groups N = 200 | | Boys N = 100 | Girls N = 100 | Level of Signifi- cance |
|----------------------------|------------------------------------|-------|-----------------|------------------|-------------------------------|
| | MEANS | S.D. | MEANS | | |
| I.Q. | 113.39 | 8.36 | 112.54 | 114.64 | .05 |
| Attendance Grade 5 | 186.41 | 10.02 | 186.34 | 186.48 | NS |
| Attendance Grade 6 | 187.93 | 6.00 | 188.71 | 187.16 | .05 |
| Average Mark Grade 5 | 78.39 | 6.18 | 77.19 | 79.60 | .01 |
| Average Mark Grade 6 | 78.45 | 6.04 | 77.22 | 79.69 | .01 |

quotient score for the boys'; this is significant at the 0.05 level. Attendance at the grade five level is very similar for the boys and girls, but the boys have a significantly higher mean attendance at the grade six level. In regard to mean academic marks, the girls have significantly higher scores than the boys at both the grade five level and grade six level.

Mean intelligence quotient scores, attendance, and average marks are shown in Table III for the Study Groups in the reduced sample. The difference in mean I.Q. scores between the boys and girls in the reduced sample is slightly more than two points which is greater than the difference noted in mean I.Q. scores between boys and girls for the total sample. The mean I.Q. score for the combined reduced sample is approximately two points above the mean I.Q. score of the combined study groups in the total sample. Table III shows that girls in the Study Group in the reduced sample had higher attendance in grade five, but boys had higher attendance in grade six. Mean average marks were higher for the girls than for the boys at both the grade five and grade six levels. With the exception of attendance at the grade six level and mean intelligence quotient score, the differences between boys and girls were similar to those observed in the total study groups.

TABLE III

MEAN ABILITY SCORE, ATTENDANCE, AND AVERAGE MARKS
FOR BOYS', GIRLS', AND COMBINED STUDY
GROUPS IN THE REDUCED SAMPLE

| | Combined Study Groups N = 136 | | Boys N = 74 | Girls N = 62 | Level of Signifi- cance |
|----------------------------|----------------------------------|------|----------------|-----------------|-------------------------------|
| | MEANS | S.D. | MEANS | | |
| I.Q. | 112.04 | 8.06 | 110.96 | 113.32 | .05 |
| Attendance Grade 5 | 186.01 | 7.94 | 185.61 | 186.48 | NS |
| Attendance Grade 6 | 186.74 | 7.46 | 187.36 | 185.98 | NS |
| Average Mark Grade 5 | 74.80 | 6.85 | 74.15 | 75.58 | NS |
| Average Mark Grade 6 | 74.00 | 6.15 | 73.03 | 75.16 | .05 |

Table IV shows the mean intelligence quotient scores, attendance, and average marks for the boys and girls in the Control Groups in the reduced sample. By comparison with Table II, which presents the same data for the total sample, it will be noted that the differences in mean intelligence quotient scores between the total and reduced samples appears negligible. Attendance at the grade five level in the reduced sample is much the same for boys and girls, but the boys have a slightly higher attendance at the grade six level. As was the case with the total sample, the girls in the Control Groups have higher mean average marks at both the grade five and grade six levels than do the boys. Significant differences were noted between boys and girls in mean ability score and mean average marks at both the grade five and grade six levels.

The comparison made in this section indicate that there are sufficient differences between boys and girls on variables such as academic records to justify separate analyses for the two groups.

School Records and Socio-Economic Characteristics

This section includes tables which show the comparison of the boys from both the study and control groups with the girls, from both the study and control groups for both

TABLE IV

MEAN ABILITY SCORE, ATTENDANCE, AND AVERAGE MARKS
FOR BOYS', GIRLS', AND COMBINED CONTROL
GROUPS IN THE REDUCED SAMPLE

| | Combined Control Groups N = 136 | | Boys N = 74 | Girls N = 62 | Level of Signifi- cance |
|----------------------------|------------------------------------|-------|----------------|-----------------|-------------------------------|
| | MEANS | S.D. | MEANS | | |
| I.Q. | 113.52 | 8.13 | 112.42 | 114.84 | .05 |
| Attendance Grade 5 | 185.81 | 11.31 | 185.77 | 185.85 | NS |
| Attendance Grade 6 | 187.78 | 5.98 | 188.00 | 187.52 | NS |
| Average Mark Grade 5 | 77.96 | 6.04 | 76.58 | 79.61 | .01 |
| Average Mark Grade 6 | 78.01 | 5.91 | 76.45 | 79.89 | .001 |

the total and reduced samples. These tables were constructed to determine if there were further differences between the sexes on the variables used in the study which might have implications for the analysis of data, and the interpretation of results. Table V shows that in both the total and reduced samples, boys were involved in more behavior problems than girls. About three times as many girls as boys were in the excellent behavior category in the total sample. The difference between behavior distributions for boys and girls in each comparison was significant beyond the .001 level.

A comparison of teachers' comments between the boys and girls for total and reduced samples is shown in Table VI; in the total sample more than three times as many girls than boys were in the above average behavior category. In the reduced sample this ratio was somewhat lower, but girls still outnumbered boys in the most favorable comment category by eighty-three to thirty-two. Almost five times as many boys as girls were in the below average behavior category in the total sample and more than six times as many in the reduced sample. The distributions for boys and girls in each case differed significantly beyond the .001 level.

TABLE V

COMPARISON OF THE DISCIPLINE RECORDS OF BOYS WITH
GIRLS IN BOTH TOTAL AND REDUCED SAMPLE

| Group | <u>Behavior Rating</u> | | | | Totals |
|------------------------|------------------------|------------------|---------|------------|--------|
| | Excellent | Above Average | Average | Problems | |
| <u>Total Sample:</u> | | | | | |
| Boys | 19 | 96 | 62 | 23 | 200 |
| Girls | 61 | 103 | 25 | 11 | 200 |
| Totals: | 80 | 199 | 87 | 34 | 400 |
| Chi Square | == 42.2672 | P = 0.001 | | C = 0.3091 | |
| <u>Reduced Sample:</u> | | | | | |
| Boys | 14 | 69 | 48 | 17 | 148 |
| Girls | 35 | 70 | 13 | 6 | 124 |
| Totals: | 49 | 139 | 61 | 23 | 272 |
| Chi Square | == 32.4853 | P = 0.001 | | C = 0.3266 | |

TABLE VI

COMPARISON OF TEACHERS' COMMENTS OF BOYS WITH
GIRLS IN BOTH TOTAL AND REDUCED SAMPLES

| Group | <u>Comment on Behavior</u> | | | Totals |
|------------------------|----------------------------|-----------|---------------|--------|
| | Above Average | Average | Below Average | |
| <u>Total Sample:</u> | | | | |
| Boys | 43 | 79 | 78 | 200 |
| Girls | 135 | 49 | 16 | 200 |
| Totals: | 178 | 128 | 94 | 400 |
| Chi Square = | 95.4754 | P = 0.001 | C = 0.4390 | |
| <u>Reduced Sample:</u> | | | | |
| Boys | 32 | 58 | 58 | 148 |
| Girls | 83 | 32 | 9 | 124 |
| Totals: | 115 | 90 | 67 | 272 |
| Chi Square = | 64.3477 | P = 0.001 | C = 0.4374 | |

Table VII shows a comparison of socio-economic area for boys and girls in both the total and reduced samples. The difference in distributions for the two groups was not statistically significant.

In regard to student mobility, Table VIII shows that the boys and girls in the total sample moved from school to school or remained in the one school for grades five and six to much the same degree. The same held true for the reduced sample. No significant difference was noted in student mobility between the sexes.

Table IX shows that the parents' occupational class for students in the total and reduced samples was much the same for the boys' groups and the girls' groups. Class V contains the largest frequency with almost one-half of the boys and a slightly lower proportion of the girls in this one category. The other four classes of occupational status for the total sample have about the same number of each sex in them, and as a result the difference between the sexes in parents' occupational class was not statistically significant. Although the value of chi square increased in the comparison for the reduced sample, the level of probability was well below that required for significance.

TABLE VII

COMPARISON OF SOCIO-ECONOMIC AREA OF BOYS WITH
GIRLS IN BOTH TOTAL AND REDUCED SAMPLES

| Group | Socio-economic Area | | | | Totals |
|------------------------|---------------------|----------|--------|------------|--------|
| | Area 1 | Area 2 | Area 3 | Area 4 | |
| <u>Total Sample:</u> | | | | | |
| Boys | 33 | 69 | 74 | 24 | 200 |
| Girls | 26 | 58 | 87 | 29 | 200 |
| Totals: | 59 | 127 | 161 | 53 | 400 |
| Chi Square = | 3.3047 | P = 0.30 | | C = 0.0905 | |
| <u>Reduced Sample:</u> | | | | | |
| Boys | 23 | 55 | 51 | 19 | 148 |
| Girls | 13 | 32 | 56 | 23 | 124 |
| Totals: | 36 | 87 | 107 | 42 | 272 |
| Chi Square = | 7.4129 | P = 0.10 | | C = 0.1629 | |

TABLE VIII

COMPARISON OF STUDENT MOBILITY OF BOYS WITH
GIRLS IN BOTH TOTAL AND REDUCED SAMPLES

| Mobility Category | | | | |
|------------------------|----------|----------|------------|--------|
| Group | Low | Moderate | High | Totals |
| <u>Total Sample:</u> | | | | |
| Boys | 68 | 86 | 46 | 200 |
| Girls | 68 | 84 | 48 | 200 |
| Totals: | 136 | 170 | 94 | 400 |
| Chi Square: | = 0.0661 | P = 0.98 | C = 0.0129 | |
| <u>Reduced Sample:</u> | | | | |
| Boys | 57 | 61 | 30 | 148 |
| Girls | 41 | 57 | 26 | 124 |
| Totals: | 98 | 118 | 56 | 272 |
| Chi Square: | = 0.9231 | P = 0.95 | C = 0.0582 | |

TABLE IX

COMPARISON OF PARENTS' OCCUPATIONAL CLASS OF BOYS
WITH GIRLS IN BOTH TOTAL AND REDUCED SAMPLES

| Group | <u>Occupational Class</u> | | | | | Totals |
|------------------------|---------------------------|----------|----|------------|---------------|--------|
| | I and II | III | IV | V | VI and VII | |
| <u>Total Sample:</u> | | | | | | |
| Boys | 44 | 18 | 17 | 93 | 28 | 200 |
| Girls | 44 | 22 | 23 | 82 | 29 | 200 |
| Totals: | 88 | 40 | 40 | 175 | 57 | 400 |
| Chi Square | = 2.0090 | P = 0.70 | | C = 0.0707 | | |
| <u>Reduced Sample:</u> | | | | | | |
| Boys | 33 | 11 | 15 | 72 | 17 | 148 |
| Girls | 25 | 15 | 14 | 47 | 23 | 124 |
| Totals: | 58 | 26 | 29 | 119 | 40 | 272 |
| Chi Square | = 5.8332 | P = 0.30 | | C = 0.1449 | | |

Table X shows the comparison of the number of grades repeated by boys and girls; it indicates that about twice as many boys in the total sample and three times as many in the reduced sample repeated grades. Only twenty-five of the two hundred girls involved in the study repeated one or more grades in the elementary school. The degree of difference between the sexes on the variable of the number of grades repeated was significant at the 0.01 level.

In addition to providing descriptions of the distribution of variables under study, the preceding analysis lends further support to the advisability of carrying out comparisons between study and control groups for each of the sexes. Differences between boys and girls might well mask differences on variables under study or serve to confound results.

Ability as a Control Variable

In view of the fact that intelligence was used as a matching variable in this study, Table XI was constructed to show the comparison of the intelligence scores for the Study Groups and the Control Groups in the total and reduced samples. Significant differences were noted between the study and control groups in each comparison in the total sample, therefore, the matching procedure using a five

TABLE X

COMPARISON OF NUMBER OF GRADES REPEATED OF BOYS WITH
GIRLS IN BOTH TOTAL AND REDUCED SAMPLES

| Group | No Repeated Grades | Repeated Once or Twice | Totals |
|------------------------|-----------------------|------------------------------|---------------|
| <u>Total Sample:</u> | | | |
| Boys | 152 | 48 | 200 |
| Girls | 175 | 25 | 200 |
| Totals: | 327 | 73 | 400 |
| Chi Square | = 8.8643 | P = 0.01 | Phi = -0.2023 |
| <u>Reduced Sample:</u> | | | |
| Boys | 114 | 34 | 148 |
| Girls | 112 | 12 | 124 |
| Totals: | 226 | 46 | 272 |
| Chi Square | = 8.4879 | P = 0.01 | Phi = -0.2482 |

TABLE XI

COMPARISON OF INTELLIGENCE SCORES FOR THE BOYS AND
FOR THE GIRLS IN THE STUDY AND CONTROL GROUPS
IN THE TOTAL SAMPLE AND THE REDUCED SAMPLE

| Group | <u>Means</u> | | <u>Standard Deviations</u> | | t Score | P |
|-------------------|-------------------------|---------------------------|----------------------------|------------------|------------|-------|
| | Study Group N=200 | Control Group N=200 | Study Group | Control Group | | |
| Total Sample | 110.03 | 113.59 | 9.06 | 8.36 | 4.068 | 0.001 |
| Boys | 109.54 | 112.54 | 9.12 | 8.41 | 2.404 | 0.01 |
| Girls | 110.53 | 114.64 | 8.97 | 8.18 | 3.370 | 0.001 |
| | N=136 | N=136 | | | | |
| Reduced Sample | 112.04 | 113.52 | 8.06 | 8.13 | 1.510 | 0.13 |
| Boys | 110.96 | 112.42 | 8.61 | 8.21 | 1.048 | 0.296 |
| Girls | 113.32 | 114.84 | 7.14 | 7.83 | 1.118 | 0.265 |

point interval was unsuccessful. In an attempt to match the study and control groups more closely a reduced sample was selected by matching the students on a one point interval on intelligence quotient score. Table XI indicates that the reduced sample did not show significant differences between the study and control groups and was a more successful matching procedure.

II. INTERRELATIONSHIPS AMONG VARIABLES

In Table XII intercorrelations among mean scores on ability rating, attendance, and average marks are shown for the total sample with a correlation coefficient of 0.205 required for significance at the 0.05 level. Ability rating and average mark in grade five produced a correlation coefficient of 0.520 which was significant at the 0.01 level. Ability rating and the grade six average mark yielded a correlation of 0.495 which is significant at the 0.01 level. Average mark in grade five and average mark in grade six produced a significant correlation of 0.705 which is significant at the 0.01 level.

The intercorrelations among the same variables for the Study Groups in the total and reduced samples are shown in Table XIII. Significant correlations were observed for the ability rating with average mark in

TABLE XII

CORRELATION MATRIX FOR MEAN SCORES ON ABILITY
RATING, ATTENDANCE, AND AVERAGE MARKS
FOR THE TOTAL SAMPLE

| (N = 400) | | | | |
|----------------------------|-----------------------|-----------------------|---------------------------|-------------------------|
| | Attendance Grade 5 | Attendance Grade 6 | Average Mark Grade 5 | Average Mark Grade 6 |
| Ability Rating I.Q. | 0.001 | -0.050 | <u>0.520</u> [*] | <u>0.495</u> |
| Attendance Grade 5 | | <u>0.370</u> | 0.112 | 0.083 |
| Attendance Grade 6 | | | -0.029 | 0.019 |
| Average Mark Grade 5 | | | | <u>0.705</u> |

*Single underlining denotes significance at the .05 level, and double underlining, significance at the .01 level.

grade five and with average mark in grade six for both sample groups. Attendance in grade five and attendance in grade six were significantly correlated for the study groups in the total sample (0.353) and also for the study groups in the reduced sample (0.628).

Table XIV shows the interrelations for the Control Groups in the total sample and the reduced sample among mean scores on ability rating, attendance, and average marks. Correlation coefficients proved to be significant for ability rating and average mark in grade five, and ability rating and average mark in grade six for both samples. Attendance in grade five and attendance in grade six yielded coefficients of 0.412 for the control groups in the total sample and 0.437 for the control groups in the reduced sample. Attendance in grade five and average mark in grade six yielded a significant correlation of 0.205 in the control groups for the reduced sample. Average mark in grade five and average mark in grade six were also significantly correlated for both the total and reduced sample control groups.

III. SUMMARY OF CHAPTER IV

This chapter presented a descriptive analysis of data collected for the total sample and the reduced sample;

TABLE XIII

CORRELATION MATRIX FOR MEAN SCORES ON ABILITY RATING,
ATTENDANCE, AND AVERAGE MARKS FOR THE STUDY
GROUPS IN BOTH TOTAL AND REDUCED SAMPLES

| | Attendance Grade 5 | Attendance Grade 6 | Average Mark Grade 5 | Average Mark Grade 6 | |
|----------------------------|-----------------------|-----------------------|----------------------------|----------------------------|-------------------|
| Ability Rating | -0.022 | -0.121 | <u>0.450</u> [*] | <u>0.462</u> | Total Sample |
| I.Q. | 0.021 | -0.156 | <u>0.455</u> | <u>0.443</u> | Reduced Sample |
| Attendance Grade 5 | | <u>0.353</u> | 0.040 | -0.044 | Total |
| | | <u>0.367</u> | 0.044 | 0.028 | Reduced |
| Attendance Grade 6 | | | -0.100 | -0.085 | Total |
| | | | -0.126 | -0.117 | Reduced |
| Average Mark Grade 5 | | | | <u>0.615</u> | Total |
| | | | | <u>0.628</u> | Reduced |

N = 200 (Total Sample)

N = 136 (Reduced Sample)

^{*}Single underlining denotes significance at the .05 level, and double underlining significance at the .01 level.

TABLE XIV

CORRELATION MATRIX FOR MEAN SCORES ON ABILITY RATING,
ATTENDANCE, AND AVERAGE MARKS FOR THE CONTROL
GROUPS IN BOTH TOTAL AND REDUCED SAMPLES

| | Attendance Grade 5 | Attendance Grade 6 | Average Mark Grade 5 | Average Mark Grade 6 | |
|----------------------------|-----------------------|-----------------------|----------------------------|----------------------------|-------------------|
| Ability Rating | 0.016 | -0.012 | <u>0.543</u> [*] | <u>0.463</u> | Total Sample |
| I.Q. | 0.036 | -0.004 | <u>0.529</u> | <u>0.506</u> | Reduced Sample |
| Attendance Grade 5 | | <u>0.412</u> | 0.180 | 0.188 | Total |
| | | <u>0.437</u> | 0.198 | <u>0.205</u> | Reduced |
| Attendance Grade 6 | | | -0.019 | 0.054 | Total |
| | | | 0.017 | 0.065 | Reduced |
| Average Mark Grade 5 | | | | <u>0.730</u> | Total |
| | | | | <u>0.733</u> | Reduced |

N = 200 (Total Sample)

N = 136 (Reduced Sample)

*Single underlining denotes significance at the .05 level, and double underlining significance at the .01 level.

comparisons were also made between boys' and girls' groups. The data showed that there were differences between the total sample and the reduced sample but with the exception of differences in ability rating, they were minor differences. A comparison of the sexes was shown in Tables V to X for both the total and reduced samples and significant differences were noted in discipline records, teachers' comments, and the number of grades repeated. No significant differences were noted between the sexes in socio-economic area, student mobility, and parents' occupational class.

Significant differences were noted between the sexes on intelligence quotient score for both the total and reduced samples, with the exception of the boys and girls study groups in the total sample. Average marks at the grade six level yielded significant differences in all comparisons; while average marks for the grade five level were significantly different for the control groups in both samples but not for the study groups. Tables were presented in this chapter to show the correlation coefficients among the mean scores on ability rating, attendance, and average marks for both samples.

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CHAPTER V

STATISTICAL ANALYSIS OF DATA

The purpose of this chapter is to present results of the statistical analysis of data collected in the study. Tables are included to show the comparisons between the study group and the control group for both the total and reduced samples and also for the boys' and girls' sub-groups in each case. The main hypothesis and the eight sub-problems expressed as null hypotheses were tested by the statistical analysis presented in this chapter.

I. ATTENDANCE

The null hypothesis predicted that there would be no significant differences in the attendance records between the students who eventually drop out of school and those who complete their high school education. This hypothesis was tested for the various samples and sub-groups by computing the mean attendance scores at the grade five and grade six levels and determining the significance of the difference using a t test.

Results

The results of the analysis are presented in Tables XV, XVI, and XVII. Differences in attendance at the grade five

TABLE XV
COMPARISON OF THE STUDY GROUPS AND THE CONTROL
GROUPS ON ATTENDANCE FOR TOTAL
AND REDUCED SAMPLES

| Group | MEAN | | S.D. | | t Score | P |
|------------------------|----------------|------------------|-------|---------|------------|------|
| | Study N=200 | Control N=200 | Study | Control | | |
| <u>Total Sample:</u> | | | | | | |
| Attendance Grade 5 | 186.24 | 186.41 | 7.60 | 10.02 | 0.0585 | 0.85 |
| Attendance Grade 6 | 186.42 | 187.93 | 7.55 | 6.00 | 2.214 | 0.02 |
| <u>Reduced Sample:</u> | | | | | | |
| | N=136 | N=136 | | | | |
| Attendance Grade 5 | 186.01 | 185.81 | 7.94 | 11.31 | 0.167 | 0.86 |
| Attendance Grade 6 | 186.74 | 187.78 | 7.46 | 5.98 | 1.268 | 0.20 |

TABLE XVI

COMPARISON OF THE BOYS' STUDY GROUP AND BOYS'
CONTROL GROUP ON ATTENDANCE FOR THE
TOTAL AND REDUCED SAMPLES

| Group | MEAN | | S.D. | | t Score | P |
|------------------------|----------------|------------------|-------|---------|------------|-------|
| | Study N=200 | Control N=200 | Study | Control | | |
| <u>Total Sample:</u> | | | | | | |
| Attendance Grade 5 | 186.63 | 186.34 | 8.02 | 11.55 | 0.0205 | 0.83 |
| Attendance Grade 6 | 187.40 | 188.71 | 7.74 | 5.18 | 1.400 | 0.16 |
| <u>Reduced Sample:</u> | | | | | | |
| | N=136 | N=136 | | | | |
| Attendance Grade 5 | 185.61 | 185.77 | 8.53 | 12.78 | 0.09 | 0.928 |
| Attendance Grade 6 | 187.36 | 188.00 | 8.08 | 5.64 | 0.551 | 0.582 |

TABLE XVII

COMPARISON OF THE GIRLS' STUDY GROUP AND GIRLS'
CONTROL GROUP ON ATTENDANCE FOR THE
TOTAL AND REDUCED SAMPLES

| Group | MEAN | | S.D. | | t Score | P |
|------------------------|----------------|------------------|-------|---------|------------|-------|
| | Study N=200 | Control N=200 | Study | Control | | |
| <u>Total Sample:</u> | | | | | | |
| Attendance Grade 5 | 185.86 | 186.48 | 7.13 | 8.22 | 0.567 | 0.571 |
| Attendance Grade 6 | 185.44 | 187.16 | 7.24 | 6.63 | 1.743 | 0.082 |
| <u>Reduced Sample:</u> | | | | | | |
| | N=136 | N=136 | | | | |
| Attendance Grade 5 | 186.48 | 185.85 | 7.15 | 9.26 | 0.42 | 0.675 |
| Attendance Grade 6 | 185.98 | 187.52 | 6.57 | 6.36 | 1.309 | 0.193 |

level were small and not statistically significant. At the grade six level the mean attendance for control groups was approximately one day above mean attendance for study groups. However, the difference was significant only for the combined groups in the total sample. Since this significant difference was not upheld in the other analyses, the null hypothesis was accepted.

Discussion

Since attendance at school is compulsory until age sixteen, it is not surprising that the difference is not significant. The observation that differences at grade six tend towards the direction that was hypothesized may be an indication that attendance might be a more significant variable at higher grade levels, particularly where regular school attendance is not enforced.

II. ACADEMIC RECORDS

The null hypothesis suggested that there would be no significant differences in the academic records between the students who eventually drop out of school and those who complete their high school education. Academic records were defined as the average mark for the grade five year and the average mark for the grade six year, and were obtained from the Classroom Record Book for each student involved in the

study. A t test was used to determine the significance of differences between the mean average marks.

Results

Tables XVIII, XIX, and XX show that all differences were statistically significant; most of these beyond the .001 level except the boys' study groups and boys' control groups in the reduced sample which was at the .02 level. Mean scores for control groups were ranged from four points to seven points higher than those for the study groups. The most noticeable difference occurred for girls at the grade five level in the total sample. In view of these results, the null hypothesis was rejected.

Discussion

The marked difference in academic records suggests that this is a highly useful variable in the identification of potential dropouts. Since groups were matched on ability it is evident that the underachievers are the particular subgroup of those with low achievement who merit attention.

III. DISCIPLINE RECORDS

The null hypothesis stated that there would be no significant differences in the discipline records between the students who eventually drop out of school and those who complete their high school education. Chi square was

TABLE XVIII

COMPARISON OF THE STUDY GROUPS AND CONTROL GROUPS ON
AVERAGE MARKS FOR THE TOTAL AND REDUCED SAMPLES

| Group | MEAN | | S.D. | | t Score | P |
|----------------------------|----------------|------------------|-------|---------|------------|--------|
| | Study N=200 | Control N=200 | Study | Control | | |
| <u>Total Sample:</u> | | | | | | |
| Average Mark Grade 5 | 74.16 | 78.39 | 6.83 | 6.18 | 6.478 | <0.001 |
| Average Mark Grade 6 | 73.47 | 78.45 | 6.16 | 6.04 | 8.2009 | <0.001 |
| <u>Reduced Sample:</u> | | | | | | |
| | N=136 | N=136 | | | | |
| Average Mark Grade 5 | 74.80 | 77.96 | 6.85 | 6.04 | 4.023 | <0.001 |
| Average Mark Grade 6 | 74.00 | 78.01 | 6.15 | 5.91 | 5.469 | <0.001 |

TABLE XIX

COMPARISON OF THE BOYS' STUDY GROUP AND BOYS'
CONTROL GROUP ON AVERAGE MARKS FOR THE
TOTAL AND REDUCED SAMPLES

| Group | MEAN | | S.D. | | t Score | P |
|----------------------------|----------------|------------------|-------|---------|---------|--------|
| | Study N=200 | Control N=200 | Study | Control | | |
| <u>Total Sample:</u> | | | | | | |
| Average Mark Grade 5 | 73.53 | 77.19 | 6.55 | 6.16 | 4.121 | <0.001 |
| Average Mark Grade 6 | 72.56 | 77.22 | 6.38 | 5.94 | 5.320 | <0.001 |
| <u>Reduced Sample:</u> | | | | | | |
| | N=136 | N=136 | | | | |
| Average Mark Grade 5 | 74.15 | 76.58 | 6.72 | 5.97 | 2.313 | <0.022 |
| Average Mark Grade 6 | 73.03 | 76.45 | 6.40 | 5.70 | 3.409 | <0.001 |

TABLE XX

COMPARISON OF THE GIRLS' STUDY GROUP AND GIRLS'
CONTROL GROUP ON AVERAGE MARKS FOR THE
TOTAL AND REDUCED SAMPLES

| Group | Study N=200 | Control N=200 | Study | Control | t Score | P |
|----------------------------|----------------|------------------|-------|---------|---------|--------|
| <u>Total Sample:</u> | | | | | | |
| Average Mark Grade 5 | 74.80 | 79.60 | 7.04 | 5.96 | 5.176 | <0.001 |
| Average Mark Grade 6 | 74.39 | 79.69 | 5.80 | 5.89 | 6.383 | <0.001 |
| <u>Reduced Sample:</u> | | | | | | |
| | N=136 | N=136 | | | | |
| Average Mark Grade 5 | 75.58 | 79.61 | 6.92 | 5.71 | 3.513 | <0.001 |
| Average Mark Grade 6 | 75.16 | 79.89 | 5.62 | 5.61 | 4.646 | <0.001 |

calculated to test the significance of differences in the distributions and the coefficient of contingency was used to measure the degree of relationship.

Results

The discipline records for the combined study groups in the total and reduced samples were compared with the records for the combined control groups in the total and reduced samples. The frequency distributions shown in Table XXI indicated that about twice as many study group students in the total sample were in the behavior problem category as were students in the control groups. Further, about twice as many control students were in the excellent category compared with students in the study groups. Similar trends were evident in the same categories for the reduced sample. The chi square values calculated on both frequency distributions were significant at 0.01 level, therefore, a significant difference was noted between the study groups and the control groups for the factor of discipline records in both the total and reduced samples.

Table XXII showed an analysis of discipline records for boys' study groups and boys' control groups in both the total and reduced samples, and although the number of students from both groups was very close for the behavior problem category, there were significant differences

TABLE XXI

A COMPARISON OF DISCIPLINE RECORDS BETWEEN THE STUDY
GROUPS AND CONTROL GROUPS FOR THE
TOTAL AND REDUCED SAMPLES

| Group | Behavior Rating | | | | Totals |
|------------------------|-----------------|---------------|----------|------------|--------|
| | Excellent | Above Average | Average | Problems | |
| <u>Total Sample:</u> | | | | | |
| Study Groups | 28 | 97 | 54 | 21 | 200 |
| Control Groups | 52 | 102 | 33 | 13 | 200 |
| Totals: | 80 | 199 | 87 | 34 | 400 |
| Chi Square = | 14.2769 | | P = 0.01 | C = 0.1856 | |
| <u>Reduced Sample:</u> | | | | | |
| Study Groups | 18 | 63 | 43 | 12 | 136 |
| Control Groups | 31 | 76 | 18 | 11 | 136 |
| Totals: | 49 | 139 | 61 | 23 | 272 |
| Chi Square = | 14.9542 | | P < 0.01 | C = 0.2283 | |

noted in the other cell frequencies. The control group in the total sample had almost three times as many students in the excellent behavior cell compared with the study group. Eighty-four of the one hundred study group students were in the above average and average behavior cells. The reduced sample showed a similar pattern with more than three times as many control students in the excellent category and more study group students in the above average and average cells. The statistical tests computed on these distributions showed a significant degree of difference between the boys' study group and boys' control group in both the total and reduced samples.

Discipline records for the girls' study group and girls' control group for both samples were compared in Table XXIII and showed a significant difference for the total sample but not for the reduced sample. In the total sample there were ten students in the study group compared with one in the control group in the behavior problem cell. The study group had fifteen fewer students in the excellent behavior category compared with the control group and eighty-five of the control group were in the above average and excellent categories. A significant difference at the 0.01 level was noted between the study group and the control group in the total sample, but the distributions for the reduced sample showed an unacceptable level of

TABLE XXII

AN ANALYSIS OF DISCIPLINE RECORDS FOR THE BOYS' STUDY
GROUP AND BOYS' CONTROL GROUP IN BOTH
TOTAL AND REDUCED SAMPLES

| Group | Behavior Rating | | | Problems | Totals |
|------------------------|-----------------|---------------|---------|------------|--------|
| | Excellent | Above Average | Average | | |
| <u>Total Sample:</u> | | | | | |
| Boys' Study Group | 5 | 41 | 43 | 11 | 100 |
| Boys' Control Group | 14 | 55 | 19 | 12 | 100 |
| Totals: | 19 | 96 | 62 | 23 | 200 |
| Chi Square = | 15.6386 | P = 0.01 | | C = 0.2693 | |
| <u>Reduced Sample:</u> | | | | | |
| Boys' Study Group | 3 | 29 | 35 | 7 | 74 |
| Boys' Control Group | 11 | 40 | 13 | 10 | 74 |
| Totals: | 14 | 69 | 48 | 17 | 148 |
| Chi Square = | 16.9378 | P = 0.001 | | C = 0.3205 | |

TABLE XXIII

AN ANALYSIS OF DISCIPLINE RECORDS FOR THE GIRLS' STUDY
GROUP AND GIRLS' CONTROL GROUP IN BOTH
TOTAL AND REDUCED SAMPLES

| Group | <u>Behavior Rating</u> | | | | Totals |
|-------------------------|------------------------|------------------|---------|------------|--------|
| | Excellent | Above Average | Average | Problems | |
| <u>Total Sample:</u> | | | | | |
| Girls' Study Group | 23 | 56 | 11 | 10 | 100 |
| Girls' Control Group | 38 | 47 | 14 | 1 | 100 |
| Totals: | 61 | 103 | 25 | 11 | 200 |
| Chi Square = | 12.1986 | P = 0.01 | | C = 0.2398 | |
| <u>Reduced Sample:</u> | | | | | |
| Girls' Study Group | 15 | 34 | 8 | 5 | 62 |
| Girls' Control Group | 20 | 36 | 5 | 1 | 62 |
| Totals: | 35 | 70 | 13 | 6 | 124 |
| Chi Square = | 4.1304 | P < 0.30 | | C = 0.1795 | |

significance at the 0.30 level. The null hypothesis was rejected in view of significant differences between study and control groups in the other analyses.

Discussion

It appears that discipline records which mark students as average should be included with the behavior problems group for identifying potential dropouts. Discipline records are compiled from the assessment of students by teachers and administrators and the results from this analysis suggest that their judgments are useful in the identification of future dropouts.

IV. TEACHERS' COMMENTS

The null hypothesis predicted that there would be no significant differences in the written comments of grade five and six teachers regarding their students, that would identify the students who eventually drop out of school and those who complete their high school education. Chi square was calculated to test the significance of differences in the distributions on this variable and the coefficient of contingency was used to measure the degree of relationship.

Results

In the analysis of the study groups and the control

groups in Table XXIV it was noted that in the total sample there were sixty-two study group students compared with thirty-two control group students in the below average grouping. More than half of the control group students were in the above average category, whereas, about one third of the study group students were in the above average cell. Significant differences were noted in this analysis for both the total and reduced samples.

Table XXV illustrates that fifty-four of the one hundred boys in study group for the total sample were in the below average grouping compared with twenty-four of the one hundred boys in the control group; and twice as many control students were in the above average category. A similar trend was noted for the reduced sample with both distributions yielding a level of significance beyond the 0.01 level.

The analysis of the girls' study and control groups for both the total and reduced samples presented in Table XXVI did not show any significant differences; rather, there was a close relationship noted in the cell frequencies. The same number of study group and control group students in the total sample were in the below average category, and the same number of each group were in the other two cells when they were combined. The reduced sample showed

TABLE XXIV

AN ANALYSIS OF TEACHERS' COMMENTS OF THE STUDY
GROUPS AND CONTROL GROUPS IN BOTH
TOTAL AND REDUCED SAMPLES

| Group | <u>Comment on Behavior</u> | | | Totals |
|------------------------|----------------------------|----------|------------------|--------|
| | Above Average | Average | Below Average | |
| <u>Total Sample:</u> | | | | |
| Study Groups | 77 | 61 | 62 | 200 |
| Control Groups | 101 | 67 | 32 | 200 |
| Totals: | 178 | 128 | 94 | 400 |
| Chi Square | = 13.0917 | P = 0.01 | C = 0.1780 | |
| <u>Reduced Sample:</u> | | | | |
| Study Groups | 47 | 47 | 42 | 136 |
| Control Groups | 68 | 43 | 25 | 136 |
| Totals | 115 | 90 | 67 | 272 |
| Chi Square | = 8.3260 | P < 0.02 | C = 0.1723 | |

TABLE XXV

AN ANALYSIS OF TEACHERS' COMMENTS FOR THE BOYS' STUDY
GROUP AND BOYS' CONTROL GROUP IN BOTH
TOTAL AND REDUCED SAMPLES

| Group | <u>Comment on Behavior</u> | | | Totals |
|------------------------|----------------------------|---------|------------------|------------|
| | Above Average | Average | Below Average | |
| <u>Total Sample:</u> | | | | |
| Boys' Study Group | 14 | 32 | 54 | 100 |
| Boys' Control Group | 29 | 47 | 24 | 100 |
| Totals: | 43 | 79 | 78 | 200 |
| Chi Square | = | 19.6191 | P = 0.001 | C = 0.2989 |
| <u>Reduced Sample:</u> | | | | |
| Boys' Study Group | 9 | 27 | 38 | 74 |
| Boys' Control Group | 23 | 31 | 20 | 74 |
| Totals: | 32 | 58 | 58 | 148 |
| Chi Square | = | 11.9871 | P < 0.01 | C = 0.2737 |

TABLE XXVI

AN ANALYSIS OF TEACHERS' COMMENTS FOR THE GIRLS' STUDY
GROUP AND GIRLS' CONTROL GROUP IN BOTH
TOTAL AND REDUCED SAMPLES

| Group | <u>Comment on Behavior</u> | | | Totals |
|-------------------------|----------------------------|----------|------------------|--------|
| | Above Average | Average | Below Average | |
| <u>Total Sample:</u> | | | | |
| Girls' Study Group | 63 | 29 | 8 | 100 |
| Girls' Control Group | 72 | 20 | 8 | 100 |
| Totals: | 135 | 49 | 16 | 200 |
| Chi Square = | 2.2531 | P = 0.50 | C = 0.1055 | |
| <u>Reduced Sample:</u> | | | | |
| Girls' Study Group | 38 | 20 | 4 | 62 |
| Girls' Control Group | 45 | 12 | 5 | 62 |
| Totals: | 83 | 32 | 9 | 124 |
| Chi Square = | 2.7015 | P < 0.30 | C = 0.1460 | |

similar results, therefore, the null hypothesis was accepted in this analysis.

Tables XXIV, XXV, and XXVI showed an analysis of the combined study and control groups, a comparison of boys' study and control groups, and a comparison of girls' study and control groups. Since significant differences were noted in two of the three analyses the null hypothesis as stated was rejected.

Discussion

Since Table XXVI comparing girls' study and control groups did not show a significant difference for either the total or reduced samples, a further check was made on data collected and the analysis on this particular variable was conducted with the original data, where tables were not collapsed to increase the cell frequency. This original data showed significance at the 0.05 level, therefore, the variable of teachers' comments would appear to be useful in the identification of potential dropouts, with the proviso that identifying potential dropouts using teachers' comments would be more reliable with boys than with girls.

V. SOCIO-ECONOMIC AREA

The null hypothesis stated that there would be no significant differences in the socio-economic area in which

TABLE XXVII

AN ANALYSIS OF SOCIO-ECONOMIC AREA FOR THE STUDY
GROUPS AND CONTROL GROUPS IN BOTH
TOTAL AND REDUCED SAMPLES

| <u>Socio-Economic Area</u> | | | | | |
|----------------------------|--------|----------|------------|--------|--------|
| Group | Area 1 | Area 2 | Area 3 | Area 4 | Totals |
| <u>Total Sample:</u> | | | | | |
| Study Groups | 30 | 61 | 73 | 36 | 200 |
| Control Groups | 29 | 66 | 88 | 17 | 200 |
| Totals: | 59 | 127 | 161 | 53 | 400 |
| Chi Square = | 8.4226 | P = 0.05 | C = 0.1436 | | |
| <u>Reduced Sample:</u> | | | | | |
| Study Groups | 21 | 41 | 47 | 27 | 136 |
| Control Groups | 15 | 46 | 60 | 15 | 136 |
| Totals: | 36 | 87 | 107 | 42 | 272 |
| Chi Square = | 6.2954 | P < 0.20 | C = 0.1504 | | |

the family resides while the student was in grades five and six, that would help to identify the students who eventually drop out of school and those who complete their high school education. Socio-economic area in this study was defined as the general level of income and standard of living or way of life within a specific geographic area. Chi square and the coefficient of contingency were used to test the significance of differences.

Results

Table XXVII shows that more than twice as many study group students in the total sample lived in Area No. 4 than control students (36 study group to 17 control group). The other three socio-economic areas had about the same number for each area for the two main groups in the total sample, but there was enough difference between study and control groups to give an acceptable level of significance at the 0.05 level. The reduced sample did not give an acceptable level of significance for the combined study groups compared with the combined control groups.

In the analysis of the boys' study group and the boys' control group presented in Table XXVIII there were twice as many study group students in Area 4, but there were also more study group students in Area 1. Therefore,

TABLE XXVIII

AN ANALYSIS OF SOCIO-ECONOMIC AREA FOR THE BOYS'
STUDY GROUP AND BOYS' CONTROL GROUP IN
BOTH TOTAL AND REDUCED SAMPLES

| <u>Socio-Economic Area</u> | | | | | |
|----------------------------|--------|--------|----------|--------|------------|
| Group | Area 1 | Area 2 | Area 3 | Area 4 | Totals |
| <u>Total Sample:</u> | | | | | |
| Boys' Study Group | 19 | 29 | 36 | 16 | 100 |
| Boys' Control Group | 14 | 40 | 38 | 8 | 100 |
| Totals: | 33 | 69 | 74 | 24 | 200 |
| Chi Square = | 5.2319 | | P = 0.10 | | C = 0.1597 |
| <u>Reduced Sample:</u> | | | | | |
| Boys' Study Group | 15 | 21 | 26 | 12 | 74 |
| Boys' Control Group | 8 | 34 | 25 | 7 | 74 |
| Totals: | 23 | 55 | 51 | 19 | 148 |
| Chi Square = | 6.5386 | | P < 0.10 | | C = 0.2057 |

TABLE XXIX

AN ANALYSIS OF SOCIO-ECONOMIC AREA FOR THE GIRLS'
STUDY GROUP AND GIRLS' CONTROL GROUP IN
BOTH TOTAL AND REDUCED SAMPLES

| <u>Socio-Economic Area</u> | | | | | |
|----------------------------|----------|----------|--------|------------|--------|
| Group | Area 1 | Area 2 | Area 3 | Area 4 | Totals |
| <u>Total Sample:</u> | | | | | |
| Girls' Study Group | 11 | 32 | 37 | 20 | 100 |
| Girls' Control Group | 15 | 26 | 50 | 9 | 100 |
| Totals: | 26 | 58 | 87 | 29 | 200 |
| Chi Square | = 7.3510 | P = 0.10 | | C = 0.1883 | |
| <u>Reduced Sample:</u> | | | | | |
| Girls' Study Group | 6 | 20 | 21 | 15 | 62 |
| Girls' Control Group | 7 | 12 | 35 | 8 | 62 |
| Totals: | 13 | 32 | 56 | 23 | 124 |
| Chi Square | = 7.7074 | P < 0.10 | | C = 0.2419 | |

there was not enough difference between the groups to be significant for this study. This was also true for the distributions for the reduced sample. The null hypothesis was accepted in this analysis.

The comparison of the girls' study group and the girls' control group for both total and reduced samples as shown in Table XXIX indicates that about twice as many study group students were in Area 4 for both samples. Approximately the same number from both study and control groups in both samples were in Area 1 cells. The level of significance on this distribution was 0.10 level so it was not acceptable; therefore, the null hypothesis was accepted as stated.

In summary, a significant difference between study and control groups was found for the combined groups in the total sample and not in any other analysis; the null hypothesis was accepted on this evidence.

Discussion

All tables dealing with the variable of socio-economic area, except the one for the combined study group compared with the combined control group in the total sample did not yield any significant differences; therefore, it appears that this variable might not be a reliable characteristic for use in the identification of potential dropouts. It

TABLE XXX

AN ANALYSIS OF STUDENT MOBILITY FOR THE STUDY
GROUPS AND CONTROL GROUPS IN BOTH
TOTAL AND REDUCED SAMPLES

| | Mobility Category | | | |
|------------------------|-------------------|-----------|------------|--------|
| Group | Low | Moderate | High | Totals |
| <u>Total Sample:</u> | | | | |
| Study Groups | 54 | 84 | 62 | 200 |
| Control Groups | 82 | 86 | 32 | 200 |
| Totals: | 136 | 170 | 94 | 400 |
| Chi Square: | = 15.3627 | P = 0.001 | C = 0.1923 | |
| <u>Reduced Sample:</u> | | | | |
| Study Groups | 40 | 60 | 36 | 136 |
| Control Groups | 58 | 58 | 20 | 136 |
| Totals: | 98 | 118 | 56 | 272 |
| Chi Square | = 7.9114 | P < 0.02 | C = 0.1681 | |

may be that there are no sharp differences between the areas established for this study and that the procedures followed in setting the socio-economic areas could be improved in similar research to provide a further test for the hypothesis.

VI. STUDENT MOBILITY

The null hypothesis stated that there would be no significant difference in the mobility of the family or in the number of schools attended by students between the students who eventually drop out of school and those who complete their high school education. Chi square and the coefficient of contingency were used to test the significance of difference for both the total and reduced sample distributions.

Results

Table XXX shows the distribution of the combined study and control groups in both the total and reduced samples. It was noted that about twice as many study group students in both the total and reduced samples changed schools several times compared with the students in the combined control groups for the two samples. Further, that two-fifths of the control groups did not change schools at all compared with about one-quarter

TABLE XXXI

AN ANALYSIS OF STUDENT MOBILITY FOR THE BOYS'
STUDY GROUP AND BOYS' CONTROL GROUP IN
BOTH TOTAL AND REDUCED SAMPLES

| Group | <u>Mobility Category</u> | | | Totals |
|------------------------|--------------------------|----------|------------|--------|
| | Low | Moderate | High | |
| <u>Total Sample:</u> | | | | |
| Boys' Study Group | 26 | 43 | 31 | 100 |
| Boys' Control Group | 42 | 43 | 15 | 100 |
| Totals: | 68 | 86 | 46 | 200 |
| Chi Square = 9.3297 | | P = 0.01 | C = 0.2111 | |
| <u>Reduced Sample:</u> | | | | |
| Boys' Study Group | 22 | 33 | 19 | 74 |
| Boys' Control Group | 35 | 28 | 11 | 74 |
| Totals: | 57 | 61 | 30 | 148 |
| Chi Square = 5.5081 | | P < 0.10 | C = 0.1894 | |

of the study group students who did not change schools at all. The former applies to the total sample, but the same trend is apparent with the reduced sample cell frequencies. A significant degree of difference was noted for both the total and reduced samples, therefore, the null hypothesis was rejected.

In the comparison of the boys' study group and control group (Table XXXI) for the total sample and the reduced sample, it was noted that twice as many study group students changed schools several times and almost half of the control group did not change schools at all. In the total sample the cell frequency for the students who had only one change of schools was the same for both the study and control groups. A significant degree of difference was noted for the total sample at the 0.01 level, but the reduced sample did not show an acceptable level of significance.

Table XXXII presented the analysis of the girls' study group compared with the girls' control group in both the total and reduced samples. In the distributions for the total sample about twice as many study group students changed schools several times compared with the control group and fewer study group students were in the high and moderate categories. The degree of difference in this analysis was at the 0.05 level and therefore, was

TABLE XXXII

AN ANALYSIS OF STUDENT MOBILITY FOR THE GIRLS'
STUDY GROUP AND GIRLS' CONTROL GROUP IN
BOTH TOTAL AND REDUCED SAMPLES

| Group | <u>Mobility Category</u> | | | Totals |
|------------------------|--------------------------|----------|------------|--------|
| | Low | Moderate | High | |
| <u>Total Sample:</u> | | | | |
| Girls' Study Group | 28 | 41 | 31 | 100 |
| Girls' Control Group | 40 | 43 | 17 | 100 |
| Totals: | 68 | 84 | 48 | 200 |
| Chi Square = | 6.2486 | P = 0.05 | C = 0.1741 | |
| <u>Reduced Sample:</u> | | | | |
| Girls' Study Group | 18 | 27 | 17 | 62 |
| Girls' Control Group | 23 | 30 | 9 | 62 |
| Totals: | 41 | 57 | 26 | 124 |
| Chi Square = | 3.2292 | P = 0.20 | C = 0.1593 | |

acceptable in this study. The reduced sample did not yield a significant degree of difference so the null hypothesis for this analysis was accepted as stated.

Discussion

The comparisons made for the variable of student mobility yielded significant differences between the study and control groups for the combined groups in the total sample, and between the boys' study and control groups and the girls' study and control groups in the total sample. In the reduced sample only one analysis shown in Table XXX for the combined study and combined control groups yielded a significant difference, which indicates that student mobility might be a useful characteristic to aid in the identification of potential dropouts, but that it might not be highly reliable.

VII. PARENTS' OCCUPATIONAL CLASS

The null hypothesis stated that there would be no significant differences in the occupational class of the parents between the students who eventually drop out of school and those who complete their high school education. Parents' occupational class refers to the classification of occupation on such characteristics as schooling and income, and was determined by means of a scale developed

TABLE XXXIII

AN ANALYSIS OF PARENTS' OCCUPATIONAL CLASS FOR
THE STUDY GROUPS AND CONTROL GROUPS IN
BOTH TOTAL AND REDUCED SAMPLES

| Group | Occupational Class | | | | | Totals |
|------------------------|--------------------|---------|----|-----------|---------------|------------|
| | I and II | III | IV | V | VI and VII | |
| <u>Total Sample:</u> | | | | | | |
| Study Groups | 25 | 21 | 21 | 98 | 35 | 200 |
| Control Groups | 63 | 19 | 19 | 77 | 22 | 200 |
| Totals: | 88 | 40 | 40 | 175 | 57 | 400 |
| Chi Square | = | 22.0940 | | P = 0.001 | | C = 0.2288 |
| <u>Reduced Sample:</u> | | | | | | |
| Study Groups | 21 | 14 | 14 | 65 | 22 | 136 |
| Control Groups | 37 | 12 | 15 | 54 | 18 | 136 |
| Totals: | 58 | 26 | 29 | 119 | 40 | 272 |
| Chi Square | = | 6.0189 | | P < 0.20 | | C = 0.1471 |

by Blishen (1, pp. 477-485).

Results

There was a highly significant difference in regard to parents' occupational class for the combined study groups compared with the combined control groups in the total sample; however, the reduced sample did not show a significant difference in this analysis (Table XXXIII). In the total sample more than twice the number of control group students, sixty-three compared with twenty-five study group students, had parents who were classed as Class I occupations, and more of the study group, thirty-five to twenty-two had parents who were in Class VI and VII. Class III, Class IV, and Class V had more study group students when compared with the same classes for the control group.

Table XXXIV indicated that three times as many boys in the control group had parents who were categorized as Class I and Class II occupations. Twice as many study group students in the total sample (19 to 9) had parents whose occupations were categorized as Class VI and VII and more than half of the study group in the total sample were in Class V, VI, and VII cells. A significant degree of difference was noted in this analysis for the total sample but not for the same analysis in the reduced sample.

TABLE XXXIV

AN ANALYSIS OF PARENTS' OCCUPATIONAL CLASS FOR THE
BOYS' STUDY GROUP AND BOYS' CONTROL GROUP IN
BOTH TOTAL AND REDUCED SAMPLES

| Group | Occupational Class | | | | | Totals |
|------------------------|--------------------|-----|----------|----|------------|--------|
| | I and II | III | IV | V | VI and VII | |
| <u>Total Sample:</u> | | | | | | |
| Boys' Study Group | 11 | 9 | 9 | 52 | 19 | 100 |
| Boys' Control Group | 33 | 9 | 8 | 41 | 9 | 100 |
| Totals: | 44 | 18 | 17 | 93 | 28 | 200 |
| Chi Square = | 15.9313 | | P = 0.01 | | C = 0.2716 | |
| <u>Reduced Sample:</u> | | | | | | |
| Boys' Study Group | 10 | 6 | 8 | 38 | 12 | 74 |
| Boys' Control Group | 23 | 5 | 7 | 34 | 5 | 74 |
| Totals: | 33 | 11 | 15 | 72 | 17 | 148 |
| Chi Square = | 8.3834 | | P < 0.10 | | C = 0.2315 | |

When the girls' study and control groups were compared as shown in Table XXXV the degree of difference was not significant for either the total or reduced samples. The null hypothesis for the variable of parents' occupational class was accepted as stated, in view of the results obtained in Tables XXXIII, XXXIV, and XXXV.

Discussion

Since two of the six comparisons made on this variable yielded significant differences, it would appear that the variable of parents' occupational class might be more useful in identifying potential dropouts for boys rather than for girls.

VIII. NUMBER OF GRADES REPEATED

The null hypothesis stated that there would be no significant differences in the number of grades repeated between the students who eventually drop out of school and those who complete their high school education. Chi square was used to test the significance of differences in the distributions and the phi coefficient, or fourfold point correlation was found for the 2 x 2 tables for the variable of the number of grades repeated.

Results

When the combined study groups were compared with

TABLE XXXV

AN ANALYSIS OF PARENTS' OCCUPATIONAL CLASS FOR THE
GIRLS' STUDY GROUP AND GIRLS' CONTROL GROUP IN
BOTH TOTAL AND REDUCED SAMPLES

| Group | <u>Occupational Class</u> | | | | | Totals |
|------------------------|---------------------------|-----|----|----------|------------|------------|
| | I and II | III | IV | V | VI and VII | |
| <u>Total Sample:</u> | | | | | | |
| Girls' Study Group | 14 | 12 | 12 | 46 | 16 | 100 |
| Girls' Control Group | 30 | 10 | 11 | 36 | 13 | 100 |
| Totals: | 44 | 22 | 23 | 82 | 29 | 200 |
| Chi Square = | 7.5733 | | | P = 0.20 | | C = 0.1910 |
| <u>Reduced Sample:</u> | | | | | | |
| Girls' Study Group | 11 | 8 | 6 | 27 | 10 | 62 |
| Girls' Control Group | 14 | 7 | 8 | 20 | 13 | 62 |
| Totals: | 25 | 15 | 14 | 47 | 23 | 124 |
| Chi Square = | 2.1462 | | | P < 0.80 | | C = 0.1304 |

TABLE XXXVI

AN ANALYSIS OF THE NUMBER OF GRADES REPEATED FOR
THE STUDY GROUPS AND CONTROL GROUPS IN
BOTH TOTAL AND REDUCED SAMPLES

| Group | No Repeated Grades | Repeated Once or Twice | Totals |
|------------------------|-----------------------|---------------------------|---------------|
| <u>Total Sample:</u> | | | |
| Study Groups | 143 | 57 | 200 |
| Control Groups | 184 | 16 | 200 |
| Totals: | 327 | 73 | 400 |
| Chi Square | = 28.1691 | P = 0.001 | Phi = -0.3519 |
| <u>Reduced Sample:</u> | | | |
| Study Groups | 101 | 35 | 136 |
| Control Groups | 125 | 11 | 136 |
| Totals: | 226 | 46 | 272 |
| Chi Square | = 15.0704 | P < 0.001 | Phi = -0.3138 |

TABLE XXXVII

AN ANALYSIS OF THE NUMBER OF GRADES REPEATED FOR THE
BOYS' STUDY GROUP AND BOYS' CONTROL GROUP IN
BOTH TOTAL AND REDUCED SAMPLES

| Group | No Repeated Grades | Repeated Once or Twice | Totals |
|------------------------|-----------------------|---------------------------|---------------|
| <u>Total Sample:</u> | | | |
| Boys' Study Group | 66 | 34 | 100 |
| Boys' Control Group | 86 | 14 | 100 |
| Totals: | 152 | 48 | 200 |
| Chi Square | = 10.9649 | P = 0.001 | Phi = -0.3088 |
| <u>Reduced Sample:</u> | | | |
| Boys' Study Group | 51 | 23 | 74 |
| Boys' Control Group | 63 | 11 | 74 |
| Totals: | 114 | 34 | 148 |
| Chi Square | = 5.4985 | P < 0.02 | Phi = -0.2562 |

the combined control groups it was found that more than three times as many study group students repeated once or twice compared with control group students for both the total and reduced samples. About seven-eighths of the control group students in both total and reduced samples had not repeated grades at all. A highly significant degree of difference was obtained in this analysis for both samples at the 0.001 level (Table XXXVI).

Table XXXVII illustrates a similar pattern for the boys' study group compared with the boys' control group in the total sample, with more than twice as many study group boys repeating once or twice and more than seven-eighths of the control group students not repeating any grades at all. In the reduced sample twice as many study group boys repeated grades and more than five-sixths of the control group did not repeat grades at all. Both sample distributions yielded a significant degree of difference.

In the comparison of the girls' study group and the girls' control group for both samples (Table XXXVIII) there were about eleven times as many study group students who repeated once or twice than students in the control groups. In the control group only two students in the total sample and none in the reduced sample repeated grades.

Since the six distributions shown in Tables XXXVI, XXXVII, and XXXVIII all yielded significant differences

TABLE XXXVIII

AN ANALYSIS OF THE NUMBER OF GRADES REPEATED FOR THE
GIRLS' STUDY GROUP AND GIRLS' CONTROL GROUP IN
BOTH TOTAL AND REDUCED SAMPLES

| Group | No Repeated Grades | Repeated Once or Twice | Totals |
|--|-----------------------|---------------------------|--------|
| <u>Total Sample:</u> | | | |
| Girls' Study Group | 77 | 23 | 100 |
| Girls' Control Group | 98 | 2 | 100 |
| Totals: | 175 | 25 | 200 |
| Chi Square = 20.1600 P = 0.001 Phi = -0.4178 | | | |
| <u>Reduced Sample:</u> | | | |
| Girls' Study Group | 50 | 12 | 62 |
| Girls' Control Group | 62 | 0 | 62 |
| Totals: | 112 | 12 | 124 |
| Chi Square = 13.2857 P < 0.001 Phi = -0.4259 | | | |

between the combined study and control groups, the boys' study and control groups, and the girls' study and control groups, it is assumed that repeating grades is a highly significant factor in identifying future dropouts. As a result of the evidence shown in these tables the null hypothesis as stated was rejected.

Discussion

Students who repeat grades in the elementary school are the ones who are more likely to be the future school dropouts as shown in this analysis. It appears that academic achievement and promotion policies may have a very definite influence on the rate of school dropout.

IX. SUMMARY OF CHAPTER V

This chapter has presented a statistical analysis of data that were used to test the main hypothesis and the eight null hypotheses for the sub-problems to be investigated by the study. It was found that differences were apparent which would aid in identifying the students who might drop out of school, and the students who will remain in school to complete their high school education. Therefore, the main null hypothesis was rejected and the research hypothesis was accepted. Further, the null hypotheses dealing with the variables of academic records,

discipline records, teachers' comments, student mobility, and the number of grades repeated, were rejected for the total sample.

In regard to the reduced sample, the null hypotheses dealing with the variables of academic records, discipline records, and teachers' comments for all distributions, except the girls' study, compared with the girls' control groups, and the number of grades repeated were rejected. Student mobility for the reduced sample did not show any significant differences, therefore, the null hypothesis was accepted. The analysis of parents' occupational class for the combined study compared with the combined control, and for the boys' study compared with the boys' control groups showed significant differences, but the comparison of the girls' study with the girls' control groups, did not show significant differences acceptable to this study. All of the distributions in the reduced sample for this variable, yielded a level of significance unacceptable for this study. Socio-economic area distributions for all of distributions for the total and reduced samples, except the combined study, compared with the combined control groups did not show significant differences.

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CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purposes of this chapter are to present a summary of the study, to outline the conclusions reached through this investigation, and finally, to present some recommendations arising from the study and to propose some implications for elementary school teachers and administrators.

I. SUMMARY OF THE STUDY

This study was designed to investigate the dropout students in the Lethbridge Public Schools during the four years 1961 to 1965, in an effort to ascertain what factors might have contributed to the eventual dropout and to discover the relationship of these factors to their school records while the students were in grades five and six. More specifically, the study attempted to determine if information in student records while the student was in grade five and grade six would indicate that the student might be a future dropout in the junior high school or the senior high school grades. As an outcome of this study it was hoped that potential dropouts might be identified earlier in the school career of the student and that elementary teachers and administrators might

prevent the eventual fact of dropping out of school by recognizing what factors contribute to a student's leaving school prematurely.

Variables were selected that appeared to be related to dropouts from the studies surveyed in the literature and then were applied to the sources of data for this study which included the cumulative records and other elementary school records used in the schools. Eight variables were selected to study for any evidence that might possibly assist in identifying future dropouts. These variables were stated as sub-problems in Chapter III.

Samples were selected through matching students who dropped out of school with students who graduated with a high school diploma or senior matriculation by ability rating, sex, and month and year of birth. The total sample included four hundred students who were classed in four sub-groups of one hundred students each: Boys' Study Group, Boys' Control Group, Girls' Study Group, and Girls' Control Group. Intelligence quotient scores were matched within a five-point interval using the scores obtained on the Intermediate Examination Otis Form A which was given to all students at the grade five level. A reduced sample of 272 students was also selected when students in the groups were matched on a one point interval on the intelligence quotient score. The hypotheses were tested for each of the samples;

the results of the statistical analysis reported in the tables were based on both the total and reduced samples. The procedures used in comparing the groups was to compute means, standard deviations, correlation coefficients, t scores, and a level of significance for the variables of attendance in grade five, attendance in grade six, average mark in grade five, and average mark in grade six. The six remaining variables were coded according to the scales set up for the study, and the frequency tables constructed from these data were used to compute a chi square, a Phi coefficient for the 2 x 2 tables, and a C correlation or contingency coefficient for the tables with more than two rows and columns. A probability level was stated for each relationship.

The analysis of data was shown by comparing the combined study groups with the combined control groups, the boys' study group with the boys' control group, and the girls' study group with the girls' control group for the total and reduced samples.

Main Problem

The main problem in this study was to investigate the school dropouts during a four year period, to ascertain what factors were related to the students' eventual dropping out and to discover the relationship of these factors to the students' school records at the grade five and six levels in school. Tables were constructed to show the significant

TABLE XXXIX

SUMMARY OF LEVELS OF SIGNIFICANT DIFFERENCES BETWEEN
THE STUDY AND CONTROL GROUPS IN THE TOTAL
SAMPLE ON THE CRITERION VARIABLES

| Variable | Total Sample N = 400 | Boys' Groups N = 200 | Girls' Groups N = 200 |
|---|-------------------------|-------------------------|--------------------------|
| Attendance Grade 5 | 0.85 | 0.83 | 0.57 |
| Attendance Grade 6 | 0.02 | 0.16 | 0.08 |
| Average Mark Grade 5 | 0.001 | 0.001 | 0.001 |
| Average Mark Grade 6 | 0.001 | 0.001 | 0.001 |
| Discipline Records | 0.01 | 0.01 | 0.01 |
| Teachers' Comments | 0.01 | 0.001 | 0.50 |
| Socio-Economic Area | 0.05 | 0.10 | 0.10 |
| Student Mobility | 0.001 | 0.01 | 0.05 |
| Parents' Occupational Class | 0.001 | 0.01 | 0.20 |
| Repeating Grades | 0.001 | 0.001 | 0.001 |
| Acceptable Level of Significance $P < 0.05$ | | | |

TABLE XL

SUMMARY OF LEVELS OF SIGNIFICANT DIFFERENCES BETWEEN
THE STUDY AND CONTROL GROUPS IN THE REDUCED
SAMPLE ON THE CRITERION VARIABLES

| Variable | Reduced Sample N = 272 | Boys' Groups N = 148 | Girls' Groups N = 124 |
|---|---------------------------|-------------------------|--------------------------|
| Attendance Grade 5 | 0.86 | 0.928 | 0.675 |
| Attendance Grade 6 | 0.20 | 0.582 | 0.193 |
| Average Mark Grade 5 | 0.001 | 0.022 | 0.001 |
| Average Mark Grade 6 | 0.001 | 0.001 | 0.001 |
| Discipline Records | 0.01 | 0.001 | 0.30 |
| Teachers' Comments | 0.02 | 0.01 | 0.30 |
| Socio-Economic Area | 0.20 | 0.10 | 0.10 |
| Student Mobility | 0.02 | 0.10 | 0.20 |
| Parents' Occupational Class | 0.20 | 0.10 | 0.80 |
| Repeating Grades | 0.001 | 0.02 | 0.001 |
| Acceptable Level of Significance $P < 0.05$ | | | |

differences between the study and control groups in the total sample and the reduced sample. In the total sample significant differences were apparent in seven of the eight variables (Table XXXIX), and in the reduced sample significant differences were noted in five of the eight variables considered in this study (Table XL).

Sub-Problems

The eight sub-problems were stated in Chapter I and were concerned with each variable investigated in the study. These sub-problems were restated as null hypotheses in Chapter III and were tested statistically to determine the significance of differences and were presented in the tables in Chapter V. A summary of these variables was prepared for both the total and the reduced samples in Tables XXXIX and XL; these show the levels of significance for all comparisons that were carried out in the tests of the hypotheses.

II. FINDINGS AND CONCLUSIONS

The most significant conclusion derived from the findings of this study was that there are factors that can be identified as early as grade five and grade six in the elementary school which can be used to identify the potential dropout. When the Study Groups were compared with the Control Groups in the total sample, all of the variables except attendance at the grade five level showed significant

differences. In the comparison of the Boys' Study and Control Groups all of the variables showed significant differences except attendance at the grade five and grade six levels and socio-economic area. When the girls' Study and Control Groups were compared all of the variables except attendance at the grade five and grade six levels, teachers' comments, socio-economic area, and parents' occupational class showed significant differences.

This study indicated that there were a greater number of significant differences for the boys' groups than for the girls' groups when their elementary records were compared. It is concluded that the identification of boys who are potential dropouts may be achieved with some of the variables used in this study to a greater degree than the identification of girls who may be potential dropouts.

Since this study involved two main samples, a total sample involving four hundred students and a reduced sample composed of 272 students, a concluding statement is necessary for the reduced sample as well as for the total sample. Similar trends were apparent in both samples, but the reduced sample showed different results for the comparisons for student mobility and parents' occupational class. The null hypotheses were accepted for these two variables for the reduced sample but not for the total sample. In the variables of discipline records and teachers' comments the

reduced sample yielded a level of significance that was not acceptable for this study in regard to the analysis of the girls' study and control groups. The combined study compared with the combined control groups and the boys' study compared with the boys' control groups for these variables did show significant differences, therefore the null hypotheses were rejected.

The fact that the distributions for the girls' study compared with the girls' control groups did not show significant differences for discipline records and teachers' comments lends further support to the conclusion, that the identification of boys who are potential dropouts may be achieved with these variables to a greater degree than the identification of girls who may be potential dropouts.

A further conclusion is that the identification of potential dropouts depends upon several factors and not any one factor alone. The most useful factors would appear to be average marks in grade five and six, discipline records, student mobility, and the number of grades repeated.

III. IMPLICATIONS AND RECOMMENDATIONS

This study shows the value of accurate recording of students' marks, attendance, test results, teachers' comments, discipline records, and other materials which could contribute

to a fuller understanding of the individual student. School systems need to devise means for collecting and analyzing this information at regular intervals to increase validity; furthermore, procedures for using the information either by teachers or counsellors need to be developed. A student profile might be one method that could be employed to record the information, but caution in applying the results of this study to individual students is necessary since some of the variables have low predictive ability.

Both research and experimentation seem to be required to determine how the educational system could be better adapted to the needs of individual students in the elementary school through such means as the non-graded, streaming or unit system where the student may be able to develop his abilities to a greater extent. Some of these organizational approaches might contribute towards a lower dropout rate by providing for variations in rates of progress, and in content, and for a generally more successful school experience for all pupils.

It is also recommended that further research in the area of identifying the factors which might indicate that a student in the elementary school might be a future dropout be undertaken. In this regard, case studies of individuals would prove useful and longitudinal studies conducted throughout the elementary school grades might

be worthwhile in the identification of the factors that lead to a student's leaving school prematurely.

If a solution to the problem of students dropping out of school is desired, the answer probably lies in meeting the needs of the student early in his school career and providing an educational foundation, which will lead to eventual graduation from high school and not eventual drop out. The responsibility rests with the teachers and administrators in the elementary school, since they have the opportunity to instil a proper attitude toward education and the schools in the student. Attempts to solve the drop-out problem at the high school level may not prove to be highly effective since it may be difficult to change the behavior patterns of students by the time they have reached the high school grades. Identification of potential dropouts early in the school career of a student appears to be a step toward the solution of the dropout problem. This study has attempted to provide some data that might assist educators to identify the potential dropouts before it is too late to help them gain an education.

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A P P E N D I X

NOTIFICATION OF DROP-OUTS

Name of School _____ Date _____

Name of Student _____ Grade _____ Age _____

Address _____ Phone _____

Reasons for Quitting:Student's Plans:

Student has seen the Counsellor: Yes _____ No _____

Counsellor's Initials _____

Parents notified: Yes _____ No _____

Principal's Signature _____

THE IDENTIFICATION OF FUTURE SCHOOL DROPOUTS BY
THE ANALYSIS OF ELEMENTARY SCHOOL RECORDS

Grading Keys

1. Attendance---Actual attendance e.g. 189/195 or 143/195
actual attendance out of possible attendance.
2. Academic Records---Average mark for the grade 5 year and
average mark for the grade six year.
3. Discipline Records---Four Point Scale:
 1. Excellent Behavior 2. Above Average Behavior
 3. Average Behavior 4. Behavior Problems
4. Teachers' Comments---Three Point Scale will be used:
 1. Above Average Student 2. Average Student
 3. Below Average Student
5. Socio-economic Area---Four Point Scale:
 1. Superior 2. Above Average
 3. Average 4. Below Average
6. Mobility---Three Point Scale:
 1. Low -- will mean no mobility within the schools of the city, or from place to place within the province other than normal promotion.
 2. Moderate -- will mean one move to another school in the city, or out of the province then back to Lethbridge.
 3. High -- will mean several moves within the city or from place to place within the province or out of the province then back to Lethbridge.
7. Parents' Occupational Class---Based on the seven point scale in Blishen Scale -- Mark as 1, 2, 3, etc. by checking the Blishen Scale. Use the Father's Occupation or Mother's Occupation if Father is deceased, or not with the family.

Agnes Davidson School

Possible list of comments for use in the
teacher comment section of the report card.

Report on Progress

Excellent work
Commendable work
Much improvement
Some improvement
No improvement
Unsatisfactory

Others:

Parent Interview Requested
Please fill out the attached
form.
Falling behind
Doing his best work
Can do better
Neglects homework assignments

ATTITUDE AND BEHAVIOR

Courteous
Dependable
Obedient
Co-operative
Careful of property
Industrious
Does assignments faithfully
Follows instructions
Good study habits
Quiet
Shows initiative
Neat worker
Interested in his work
Gets along well with others
Self-assured
Good emotional control
Doing good work

Antagonistic
Impertinent
Does not complete assignments
Disobedient
Makes no effort
Makes little effort
Does not follow instructions
Poor study habits
Talkative
Noisy
Lacks initiative
Unresponsive
Careless work
Indifferent, Inattentive
Antisocial
Retiring, Nervous
Lacks emotional control
Extra work needed

PROGRESS REPORT FOR GRADES 3, 4, 5, 6.

LEARNING TO USE
THE TOOLS OF EDUCATION

KEY TO GRADING

REPORT

| READING | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Reads aloud with expression | | | | |
| Reads with understanding | | | | |
| Shows interest in literature | | | | |
| LANGUAGE | | | | |
| Speaks effectively | | | | |
| Does written language well | | | | |
| SPELLING | | | | |
| Is careful in spelling | | | | |
| ARITHMETIC | | | | |
| Is skilful in accuracy | | | | |
| Solves reasoning problems | | | | |
| WRITING | | | | |
| Writes quickly, neatly, and legibly | | | | |
| MUSIC | | | | |
| Is gaining in musical ability and knowledge | | | | |
| ART | | | | |
| Is creative and skilful in art activities | | | | |
| SOCIAL STUDIES | | | | |
| Organizes materials and knows facts | | | | |
| PHY. ED.- HEALTH | | | | |
| Is acquiring a knowledge of health facts | | | | |
| Is developing skill in games | | | | |
| SCIENCE | | | | |
| Organizes materials and knows facts | | | | |
| Days Absent | | | | |
| Times Late | | | | |

H--90-100 Excellent
 A--80-89 High average
 B--73-79 Average
 B- 65-72 Low average
 C--50-65 Unsatisfactory
 Chance of promotion is endangered
 D--Below 50 Extremely weak

Teacher's and Parent's
Comments

Parent's Signature.....

Grade _____ School _____ Teacher _____ Year _____

[illegible]

CLASSROOM RECORD SHEET

Grades 3, 4, 5, 6.

GRADING
 H--90 - 100
 A--80 - 89
 B--73 - 79
 B- 65 - 72
 C--50 - 64
 D--Below 50

ABILITY

SURVEY TESTS

1 2 3
 Reading
 Spelling
 Accuracy
 Problems
 Language

Birth Date
 Grade

Grades Repeated
 1 2 3 4 5 6

Name ----- Address ----- Phone -----

| | Days Absent | Times Late | READING 1 2 3 | LANG. 1 2 | Spelling 1 2 | ARITH 1 2 | Writing | Music | Art | Social Studies | PHY ED. 1 2 | Science | Class Standing | Remarks re: Attitude, Conduct, Attention to Work, Etc. |
|------------------|-------------|------------|------------------|--------------|-----------------|--------------|---------|-------|-----|----------------|----------------|---------|----------------|---|
| Previous Year | | | | | | | | | | | | | | |
| November | | | | | | | | | | | | | | |
| January | | | | | | | | | | | | | | |
| April | | | | | | | | | | | | | | |
| June | | | | | | | | | | | | | | |
| Average For Year | | | | | | | | | | | | | | |
| Teacher | | | | | | | | | | | | | | |

LETHBRIDGE SCHOOL DISTRICT No. 51

Date _____

School _____

Grade _____

| | Room Number | | | | | | | | Total |
|-----------------------------|-------------|--|--|--|--|--|--|--|-------|
| | | | | | | | | | |
| A Less than 20 days | | | | | | | | | |
| B Between 20 and 39 incl. | | | | | | | | | |
| C Between 40 and 59 incl. | | | | | | | | | |
| D Between 60 and 79 incl. | | | | | | | | | |
| E Between 80 and 99 incl. | | | | | | | | | |
| F Between 100 and 119 incl. | | | | | | | | | |
| G Between 120 and 139 incl. | | | | | | | | | |
| H Between 140 and 159 incl. | | | | | | | | | |
| I Between 160 and 179 incl. | | | | | | | | | |
| J Between 180 and 199 incl. | | | | | | | | | |
| K Perfect Attendance | | | | | | | | | |

Number of days school open _____

TOTAL: _____

N.B. -- ONLY ONE GRADE PER SHEET

TOTAL EACH GRADE, on one sheet

***Number of Perfect Attendance _____

LETHBRIDGE SCHOOL DISTRICT No. 51

146

School _____

Date _____

Grade _____

Home Room Number _____

| | Total |
|------------------------------------|-------|
| A <u>Less than 20 days</u> | |
| B <u>Between 20 and 39 incl.</u> | |
| C <u>Between 40 and 59 incl.</u> | |
| D <u>Between 60 and 79 incl.</u> | |
| E <u>Between 80 and 99 incl.</u> | |
| F <u>Between 100 and 119 incl.</u> | |
| G <u>Between 120 and 139 incl.</u> | |
| H <u>Between 140 and 159 incl.</u> | |
| I <u>Between 160 and 179 incl.</u> | |
| J <u>Between 180 and 199 incl.</u> | |
| | |
| TOTAL: | |

Number of days school open _____

*** Number of Perfect Attendance _____

Signature of Home Room Teacher

THE IDENTIFICATION OF FUTURE SCHOOL DROPOUTS BY
THE ANALYSIS OF ELEMENTARY SCHOOL RECORDS

| Study Group | Control Group |
|---------------|---------------|
| January 19-- | January 19-- |
| | |
| | |
| February 19-- | February 19-- |
| | |
| | |
| March 19-- | March 19-- |
| | |
| | |
| April 19-- | April 19-- |
| | |
| | |
| May 19-- | May 19-- |
| | |
| | |
| June 19-- | June 19-- |
| | |
| | |
| | |

THE IDENTIFICATION OF FUTURE SCHOOL DROPOUTS BY
THE ANALYSIS OF ELEMENTARY SCHOOL RECORDS

| Study Group | Control Group |
|----------------|----------------|
| July 19-- | July 19-- |
| | |
| | |
| August 19-- | August 19-- |
| | |
| | |
| September 19-- | September 19-- |
| | |
| | |
| October 19-- | October 19-- |
| | |
| | |
| November 19-- | November 19-- |
| | |
| | |
| December 19-- | December 19-- |
| | |
| | |
| | |

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